

AN INTEREST/VOCATIONAL-TECHNICAL EDUCATION
LINKAGE MODEL TO FACILITATE CAREER/IN
DEVELOPMENT AND REVISION IN ORIENTAL PORTCULTURE

BY

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TABLE OF CONTENTS

	PAGE
ACKNOWLEDGMENT	14
LIST OF TABLES	VII
LIST OF FIGURES	10
ABSTRACT	8
CHAPTER	
I INTRODUCTION	1
Purpose of the Study	3
Need for the Study	4
ASSUMPTIONS	7
Delimitations and Limitations	8
Definitions	8
II LITERATURE REVIEW	10
Introduction	10
Curriculum Planning	12
Curriculum Revision	24
Summary	25
III DESIGN OF THE STUDY	31
Questions to be Answered	31
Methodology	31
Hypotheses	32
Questionnaire	34
Survey Population	34
Questionnaire Construction and Response	36
Data Analysis	40
IV RESULTS	44
Introduction	44
General Information	44
Survey Data	47

CHAPTER		PAGE
V	DISCUSSION	64
	Introduction	64
	Curriculum Development	64
	Curriculum Revision	69
	Educational Institution Characteristics	70
	Military Association Characteristics	71
	Military Association/Educational Curriculum Linkage Development Educational Institution Perspective	71
	Military Association/Educational Curriculum Linkage Development Military Association Perspective	71
	Military Association/Educational Curriculum Cooperation	78
VI	STATE MILITARY ASSOCIATION/EDUCATION TECHNICAL EDUCATION LINKAGE MODEL	80
	Introduction	80
	Linkage Rationale	80
	Industry/Education Linkage Model	81
VII	SUMMARY, CONCLUSIONS, RECOMMENDATIONS	88
	Summary	88
	Conclusions	93
	Recommendations	95
APPENDICES		
A	MILITARY ASSOCIATION/EDUCATION LINKAGE REPORT (IA)	97
B	MILITARY ASSOCIATION/EDUCATION LINKAGE REPORT (II)	99
C	MILITARY ASSOCIATION QUESTIONNAIRE PRESENT PANEL	101
D	EDUCATIONAL INSTITUTION QUESTIONNAIRE PRESENT PANEL	102
E	PARENT LETTER (IA)	104
F	PARENT LETTER (II)	105
G	MILITARY ASSOCIATION EXECUTIVE LETTER	106

APPENDICES

A	FIRST QUESTIONNAIRE LETTER (SA)	100
I	FIRST QUESTIONNAIRE LETTER (SI)	108
J	SECOND QUESTIONNAIRE LETTER (SA)	108
K	SECOND QUESTIONNAIRE LETTER (SI)	118
L	THIRD QUESTIONNAIRE LETTER (SI)	118
REFERENCES		118
BIOGRAPHICAL SKETCH		118

LIST OF TABLES

TABLE		PAGE
1	Nursery Association Curriculum Development Response Rates	34
2	Educational Institution Questionnaire Response Rates	34
3	Status of Educational Institution Respondents	43
4	Educational Institution Distribution and Response Rate	45
5	Educational Institution Questionnaire Development Contact	48
6	Curriculum Development Input	49
7	Method of Curriculum Development Input	49
8	Nursery Association Curriculum Development Contact	50
9	Reaction to Contact	54
10	Educational Institution Questionnaire Revision Contact	54
11	Curriculum Revision Input	55
12	Method of Curriculum Revision Input	57
13	Nursery Association Curriculum Revision Contact	54
14	Reaction to Contact	54
15	Educational Institution/Nursery Association Curriculum Development Input Opinions	58
16	Educational Institution/Nursery Association Curriculum Revision Input Opinions	54

TABLE	PAGE
17	Educational Institutions/Nursery Association Curriculum Development Input Opinions 37
18	Educational Institutions/Nursery Association Curriculum Revision Input Opinions 50
19	Educational Institutions/Nursery Association Comparative Opinions 51
20	Educational Institutions Responses to Questionnaire Items Five through Twelve ... 60
21	Nursery Association Responses to Questions with Items Five through Fourteen 62
22	Nursery Association/Educational Institutions [Curriculum Development-- Educational] Institution Perspectives 63
23	Nursery Association/Educational Institutions [Curriculum Development-- Nursery Association Perspectives] 65

LIST OF FIGURES

FIGURE		PAGE
1	The Curriculum Planning Process	14
2	Curriculum development in Vocational and Technical Education	18
3	State Nursery Association/Education Linkage Model	22

Abstract of Dissertation Presented to the Graduate College
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AN IDENTITY/FUNCTIONAL-TECHNICAL INNOVATION
LINKAGE MODEL TO FACILITATE CURRICULUM
DEVELOPMENT AND LIAISON IN ORNAMENTAL HORTICULTURE

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The purpose of this study was to examine the role of state nursery associations in planning and revising ornamental horticulture curricula in postsecondary institutions of less than baccalaureate level. The method and level of involvement, as well as the opinions concerning involvement, were examined to provide a basis for the development of a linkage model.

Data were collected using mailed questionnaires. The questionnaires were sent to 45 state nursery association executives and 118 educators throughout the United States. The response rate was 46.4 percent from the nursery association executives and 73.3 percent from the educators.

The data from the survey instruments were tabulated and, where appropriate, comparisons were made between the two groups. Data were analyzed using frequency responses and statistical tests. The 2 x 2 chi-square test with Yate's correction for continuity and the 2 by 2 contingency table chi-square test were used. The .01 level of significance was used for each test. Responses from the unstructured items as the open-ended items were also tabulated and presented.

The data collected in this study indicated that there was a disconnect between nursery associations and educational institutions regarding curriculum development and revision. Both groups agreed that nursery associations can serve to facilitate the development and revision of the educational curriculum curriculum. Personal contact was considered by both groups as the most appropriate communication method for developing a linkage.

Based on the findings of this study, the following recommendations were offered to facilitate the linkage development process:

1. Support from both parties should be requested to promote linkage development.
2. The linkage should be developed in a systematic manner, first specifying a line of communication, and then progressing to the implementation level.
3. The linkage activities should serve to maintain the relationship.

4. The linkage should be evaluated on a continuous basis to assess its effectiveness and provide for improvement.

In conclusion, curriculum development and revision in vocational/technical education could be accomplished with greater industry input by continuing and maintaining an industry/education linkage.

CHAPTER I INTRODUCTION

The vocational horticulture industry in the United States has developed into a multi-billion dollar business (Boroy, 1981). The need for trained individuals in this field is evident in the employment requests of the industry and the presence of over 100 postsecondary institutions of less than baccalaureate level providing vocational horticulture educational programs. The concern for providing properly trained individuals for the vocational horticulture industry through the appropriate development and utilization of curricula provided the impetus for this study. The focus of the research was the linking of state nursery associations with educational institutions to facilitate the development and revision of vocational horticulture curricula at institutions of less than baccalaureate level.

The vocational horticulture industry has diverse manpower-training demands and needs. The educational emphasis of institutions providing vocational horticulture programs must be consistent with the needs of the industry in that area. Making curriculum decisions at the national level does not provide for local needs, while making curriculum decisions at the local level may result a curriculum that will limit the employability of the

program graduates. The postsecondary institutions must provide graduates who are at least employable throughout the state. The state nursery association could provide input for curriculum planning that represents the needs of industry on a state-wide basis.

Forty-seven states have state nursery associations. Membership ranges from 47 in Montana to over 2,000 in California. In most states these associations are made up of representatives from all the areas of the commercial horticulture industry. The areas of nursery production, sales and servicing, landscape design, construction, and maintenance, turf management, arboriculture, greenhouse management and operations, and investigation are represented in the membership of these associations.

Forty-five states have postsecondary institutions offering horticultural training at least the baccalaureate level. One-, two-, and three-year programs offer certificates, diplomas, or associate degrees upon the successful completion of the program of study. The programs are offered at community colleges, vocational and technical centers, and four-year colleges and universities. Enrollment in these programs in 1980 was approximately 14,000 (NHS, 1981).

To meet the needs of industry, postsecondary vocational-technical institutions offering commercial horticulture programs must maintain contact with industry. According to Whitten (1978):

The major goal of all vocational-technical programs should be successful placement of graduates in worthwhile positions in the area for which they were trained and in order to accomplish this goal prior to the year, student support must be maintained with both the student and industry. (pp. 188-189)

We also pointed out that it is not an easy task to train students for the ever-changing agricultural industry. Christensen (1988) emphasized that the bottom line for any agricultural program is retention. He asks, "Are the skills and abilities being taught really the ones industry wants its employees to have, and do we as instructors really know what the needs of the employer are?" (p. 7).

Purpose of the Study

The purpose of this study was to examine the role of state nursery associations in planning and revising ornamental horticulture curricula at postsecondary institutions of less than baccalaureate level.

Objectives of this study were to

1. Determine the number of state nursery associations with involvement in curriculum development and revision,
2. Survey participating nursery associations to determine the type and extent of involvement,
3. Survey educational institutions of less than baccalaureate level offering ornamental horticulture programs within those states with nursery association involvement to determine the type of involvement.

4. Analyze the opinions of educational institutions and advisory committees concerning curriculum revision needs.
5. Develop a linkage model of state nursery schools, time and educational institutions of less than kindergarten level offering contextual instructional programs that would facilitate effective curriculum development and revision.

Need for Job Study

The necessity of keeping the curriculum in vocational-technical education relevant is undoubted and is an accepted fact. The manner in which a curriculum is kept relevant to the needs of industry tends to vary with the philosophy of an institution, with a particular program, and ultimately with the individual instructor.

The Federal government has recognized the need for curricula relevance with its interest in the use of advisory committees in vocational-technical education. Advisory committees are made up of individuals, primarily selected from outside the educational profession, who collectively advise regarding educational efforts within the educational system. Gordon (1977) suggested that

the membership of this committee should represent the interests of the community in schools. Efforts should be made to bring in the varied interests of business, labor, former graduates, and other segments of the public. The committee should be chosen from individuals who, because of their broad knowledge, interest in education, and concern with the social and economic concerns

of the community, and provide the school with the guidance it needs to carry on its responsibility to provide an effective system of skilled workers. (p. 28)

Advisory committees in vocational education were first recommended in 1917 with the passage of the Smith-Snyder Act (44-147) (Smith & Snyder, 1979). The Vocational Education Act of 1963 (P.L. 88-212) required that state boards for vocational education administer state advisory committees for vocational education (Schmidt, 1979). The Vocational Education Amendments of 1968 (P.L. 90-478) insisted on the use of national and state advisory councils (National Advisory Committee on Vocational Education, 1978). The local advisory committee became a requirement by federal law with the passage of the Vocational Education Amendments of 1978 (P.L. 95-602) (Lamar, 1980).

Because of legislative mandates, schools offering vocational education maintain at least one form of advisory committee. Advisory committees at each community are often used at the program level within the school. The advisory committee serves many functions. The American Vocational Association has suggested that the most important function of the advisory committee is to provide for cooperation and close contact between the school and industry (Arm, 1980).

Concern for curriculum relevance has been prominent at the state level as evidenced by the guidelines

presented in state plans for vocational education mandating advisory committees (Maine Department of Educational and Cultural Services, 1981). At the local or institutional level, this concern is also reflected in the use of institutional advisory committees and program-level committees. To be effective, the instructional staff, as pointed out by Christensen (1988), must maintain contact with industry; the advisory committee serves this function.

Stewards have recognized the need to maintain close ties with industry to assure curricula relevance. The American Vocational Association, a national association voicing concerns of vocational educators, addressed the necessity of an industry/education linkage in its 1981 Resolutions. Resolution Five called for strengthening the collaboration between vocational education and the private sector (AAV, 1981g). Similarly in 1981, the vice president for education for the American Society for Manufacturing Engineers, formed an ad hoc committee to maintain and improve communication between industry and postsecondary departments. The Association of Community College Trustees developed a national council to promote a closer relationship between two-year institutions and industry (Gardner, 1981).

Most industries have also recognized the need for curricula relevance. Pickett (1985), the president of the Ohio Nurserymen's Association, requested industry input in horticulture curriculum planning at Ohio State

University so that the needs of industry could be more closely met. Hart and Lenninger (1970) reported that it was to industry's advantage to have schools teach students in a manner that benefited industry. "The most important and persuasive single reason for industry to encourage involvement in public education is industry's concern for an assured continuing supply of well-educated and properly-trained manpower" (p. 3). They also pointed out that "most industry-education cooperative efforts have been initiated by industry" (p. 4).

The need for this study was based on the researcher's opinion that curriculum planning in vocational-technical education should include industry input. The use of a state nursery association as a resource in occupational vocational curriculum development adds to the base of information available to the curriculum planner. As an adjunct to other curriculum planning and revision resources, the use of state nursery associations has been suggested as a desirable means of maintaining a relevant curriculum in occupational horticulture at the postsecondary level.

Assumptions

For the purpose of this study it was assumed that

1. The state nursery association represents or is the same as the occupational horticulture industry.
2. The respondents in this study responded in an honest and accurate manner.

Limitations and Limitations

Limitations included the following:

- 1) Only postsecondary institutions offering less than baccalaureate level programs were included in the study. No attempt was made to include other institutions offering nonbaccalaureate programs.
- 2) Only state agency associations were included in the study.
- 3) Public educational institutions and the Maine Farmworker's Association were not included, because the researcher is closely associated with both.
- 4) The data were analyzed using comparative tests.

Limitations of the study included the following:

1. The literature revealed very little research related to the subject of this study.
2. The data were obtained using mailed survey instruments. This was the only method of contact between the researcher and the participants. This method of data gathering has limitations. Any (1978) came to the same conclusion.

Definitions

Terms used in this study were defined as follows:

Curriculum: Those experiences, both academic and nonacademic, presented or participated in by the students (Irish & Crowlton, 1974).

Curriculum Planning: The process of creating a curriculum (Taylor & Alexander, 1974).

Sanitation Revision. The process of changing an existing sanitation.

Linkage. "Any interdependence between organizations that requires mutual coordination or exchange of resources and activities" (Brewster, Brownson, Bolong, & Delany, 1998, p. 11).

Commercial Horticulture. The study of the culture, maintenance, and marketing of ornamental plants.

United Nations Association. A group of individuals representing the commercial horticulture industry who hold membership is an association to promote the interests of the industry.

Vocational-Technical Education. Specialized education provided at the postsecondary level to facilitate development of those skills and attitudes in individuals necessary for employment in an occupation or upgrade employed workers (Maurish & Maurish, 1974).

CHAPTER II LITERATURE REVIEW

Introduction

The development and revision of occupational horizontal-scale curricula at the postsecondary level was the primary concern of this study. The review was limited to the following sources: Comprehensive Bibliography Index, 1940-1970, 1973-77, 78, 79, 800; YOUNG, Alexander, Education Progress, Journal of Vocational Education Research, Journal of American Association of Teacher Educators in Agriculture, Current Index in Journals in Education, Quantitative Abstracts International - a computer search by Bibliographic Abstract Services with a data base of Abstracts, Index, Terms, and Social Sciences Citation Index was run. The computer search retrieved information from 1940 through 1981.

Curriculum Planning

Concepts of Curriculum

Views differ as to what a curriculum is. H. Johnson (1967) provided two definitions of curriculum. It may be looked at as a plan for what is to be learned that is developed prior to instruction, or 'a structured series of intended learning outcomes' (p. 130). Boyles and Alexander (1974) presented a critical discussion of

curriculum concepts. They indicated that the most prominent notion of curriculum is that of subjects and subject matter taught. The experiences of the learner are also accepted as the curriculum. During the late 1950s curriculum took on the meaning of being objectives or ends that were attained through instruction. They defined curriculum as "a plan for providing sets of learning opportunities to achieve broad goals and related specific objectives for an identifiable population served by a single school center" (p. 8).

If curriculum is looked at as those experiences that the student undergoes, then the concept must be explained in terms of experiences. Frank and Gunkelton (1978) interpreted the experiences to include the academic and nonacademic experiences possessed by or participated in by the students. This is important when considering the vocational-technical curriculum. Activities that occur off campus, i.e. work experience, would be considered as part of the curriculum under this definition.

The essence of what the curriculum is provides the basis of an individual's approach to curriculum planning. In this study, curriculum was considered as the experiences students have during their programs of study with the majority of those experiences provided by the courses offered in the program.

Curriculum Planning - General

The literature used the term curriculum planning interchangeably with curriculum development in most instances. Hagler and Alexander (1974) stated that the terms were not synonymous:

We do not perceive distinct meanings for each of these terms, but some particular specific senses as to which other terms and usage suggest curriculum planning as the appropriate term to describe the process of creating a curriculum. (p. 7)

Citations have been presented using both terms and both terms were taken to mean the process of creating a curriculum.

Waga (1947) identified three definite jobs involved in curriculum planning:

First. The determination of fundamental objectives, the great purposes of the curriculum as a whole and of its several departments.

Second. The selection of activities and other materials of instruction, choice of content, reading, exercises, recitations, reports for open forum discussions, manual activities, health and recreational programs.

Third. The discovery of the most effective organization of materials and their sequential placement in the grades of the public schools.

All three tasks are of vital importance to the proper construction of the curriculum. Consequently or implicitly, the curriculum-maker is always guided by two objectives in the selection of activities or other materials of instruction, and in their organization and grade-placement. (p. 51)

According to Paulsen (1974)

During the 1930s, theory and research on the curriculum planning process included attention to four major issues--the importance of stating objectives, the nature and characteristics of the curriculum revision movement, the role of the teacher in curriculum planning and the effect of legislative and organized pressure groups on the curriculum. (p. 199)

Ralph Tyler, a leading curriculum theorist, developed a model for curriculum planning which has been used since the 1930s. The model consists of four questions curriculum planners must answer (Tyler, 1973, p. 57).

1. What subject matter should be taught?
2. What should the students do to learn this subject matter?
3. How should learning experiences be organized?
4. How should the effectiveness of the curriculum be appraised?

This four-step process was formally introduced in 1933 and is still well regarded today. Paulsen (1974) supported this fact by reporting that in the "1940s and 1950s curriculum planning usually included four basic steps--identification of goals, selection of designs, selection and organization of learning experiences, and evaluation" (p. 120).

Other models of curriculum development are in use. Tyler and Alexander's model of curriculum development is found in Figure 1. Fink and Franklin developed a curriculum development model for vocational and

State (external
variables)

Goals,
Objectives,
and Strategy

Curriculum map
comprised of external variables by planners responsible for plans
to achieve within each curriculum domain outlined and the entire plan,
the particular goals and objectives of each domain and the total plan

**Curriculum
integrated**
Decisions as to the
various goals for the
curriculum
planning group for
a particular school
system. Various policy
decisions by political
and social agencies
may limit the final
designs.

**Curriculum
Implementation
(Instruction)**
Decisions as to integrated
goals made by the
responsible individual.
The curriculum plan for
each classroom as to
which resources as to
materials, media, attain-
ment, then determine
standards and more
decisions for the individual
and students.

**Curriculum
evaluation**
Methods to determine
progress for determining
learning progress made by
the responsible individual
in relation to the
standards for evaluation
the curriculum plan made by
the responsible planning
group. Evaluation also serves
to determine making
to further planning



Figure 1. The Curriculum Planning Process

technical education (Figure 1). The Tyler technique can be seen in these two models.

Curriculum development has a strong theoretical basis, and educators have benefited from using this basis in curriculum decision making. E. Johnson (1978) reported some rather practical wisdom in the process.

Those who work in curriculum development and revision at the community college level need to look closely at the existing road signs to see more clearly where they have been, where they are going, and where they may want to go so they don't emerge at some unwanted location. (p. 1)

Influences on Curriculum Planning

The development of a curriculum may involve individuals and agencies other than those closest to the curriculum. Kaplan and Alexander (1976) discussed external forces that influenced curriculum planning. The major forces included:

1. National curriculum projects--the post-World War efforts to improve U.S. education resulted in the development of curricula at the national level.
2. Tradition--the beliefs of those affected by curricula decisions exert influence on the planning process.
3. Association--accrediting agencies at all levels provide guidelines for curriculum content.
4. The preparatory system--the interconnections of our educational system directs expectations



Figure 3. Curriculum Development in Vocational and Technical Education

Revised from Curriculum Development in Vocational and Technical Education: Planning, Content, and Implementation by C. B. Finch and J. E. Frankforter. Copyright 1979 by Allyn and Bacon, Boston. Reprinted by permission.

concerning the preparation of those students serving through the system.

3. Public opinion--the influence of the public is evident in all schools.
4. Special interest groups--patriotic, political, religious, and civic groups pressure school systems in curricular decisions to ascertain that their views are represented.
5. Educational material producers--the suppliers of educational materials influence the curriculum.
6. Testing programs--the effect of the testing industry is substantial.
7. Philanthropic foundations--through their support of research they influence curriculum development.

Add to the above the influence of the various levels of government, and it can be seen that curriculum planning has many external influences. Shaw (1986) described the process as a matter of hearing and pulling of various, and sometimes conflicting, interest groups.

In vocational education, industry has provided a major influence on curriculum planning. Eppeland (1977) stated this view.

Curriculum writers in education generally and in vocational education specifically require a point of commencement. That beginning is usually provided in the form of data from society related to what students must learn for appropriate induction into

a given culture or sub-culture. The significance of vocational education in employment. It follows that the most appropriate input for vocational education curriculum development must come from employers. (p. 17)

Isaac (1975) determined the factors influencing program planning as perceived by 500 high school principals. With a response from 333 principals, 45 percent or more of the respondents listed these factors: teachers' decisions, student interests, administrative decisions, college requirements, school philosophy, and state regulations. This study pointed out the internal as well as external factors influencing curriculum planning.

Curriculum Planning - Vocational/Technical Education

The development of a vocational-technical curriculum is similar to curriculum development for other forms of education. Benrich and Benrich (1983) categorized curriculum development for vocational-technical education as one of three types:

1. The social demand approach -- relates to what the employment opportunities are.
2. The manpower requirements approach -- relates curriculum to future economic demands for goods and services.
3. The benefit/best approach -- aims at planning to achieve the best for learners.

Benrich and Benrich supported that curriculum planning involves a combination of these factors:

As has been stated previously, the planning of vocational-technical curricula is based on determining the needs of the occupation for which the curriculum is being designed. A review of several approaches to gathering this information follows.

Vocational teachers often use the participative process of curriculum planning, a method that involves meeting in a group to develop curriculum plans. Instruction is often facilitated by using curriculum guides as a resource. The guides or materials are developed by government agencies, industry, and educational institutions. In 1979 the Vocational-Technical Education Commission of States (V-Tecs) developed curriculum guides, based on performance objectives, which have been used in developing curricula at the local level. Ross (1980) reported that in vocational-technical curriculum development in community colleges in western states, curriculum guides were used as the major resources for curriculum development.

Task analysis, which was used to develop the V-Tecs curriculum guides, has been used extensively in curriculum planning for vocational-technical education. Task analysis requires an identification of all tasks performed by workers in a specific job. Task analysis has been successful in identifying competencies necessary for students to prepare for specific occupations.

Task analysis has been used extensively as an aid in developing agricultural curricula. Lomas (1971) used this approach for developing an occupational health-care curriculum. The most comprehensive task analysis study in vocational agriculture was the National Agriculture Occupations Study (McClay, 1978).

Task analysis has been used in formulating competency- or performance-based education and is thought of as a product of the 1960s; yet one of the early curriculum theorists, Franklin Bobbitt, in his 1918 book, The Curriculum, discussed the importance of using the activity analysis approach to curriculum planning.

Occupational analysis, which is broader in scope yet similar to task analysis, is another method used to determine curriculum content.

Occupational analysis consists of identifying by observation, interview and study the technical and non-technical factors of a specific occupation and reporting the significant activities and requirements of the worker. (Mehrich & Mehrich, 1974, p. 182)

Forster and Seymour (1974) indicated that to ensure curriculum relevance, the development of any vocational program should be based on occupational analysis.

Another approach to curriculum development, that is utilized in agricultural education, is the Frenchian method. French and Frankison (1979) described this method of curriculum content determination. Characteristics that are common to a particular industry were

studied. These broad characteristics were used as the basis of the curriculum.

Curriculum development in vocational-technical education is facilitated by utilizing input from industry. This provides a link between education and industry. The contributions of industry to curriculum planning will be discussed in the next section.

Industry/Education Cooperation in Curriculum Planning

Recognition of the needs of industry is of paramount importance in vocational-technical education. Elmer Evers, president of General Motors, in a speech to the American Society of Training and Development, gave the following advice to maintain industry's interest in education.

Educational programs which desire the commission and support of industry must relate to the needs and objectives of industry. We are trying to develop closer relations with schools. (Brenner, *Modern & Winfield* 1978, p. 16)

Both industry representatives and educators support cooperation or linkages between education and industry. Benetky and Dove (1976) defined a linkage as "any arrangement between organizations that requires mutual coordination and/or exchange of resources and activities" (p. 17). They outlined a model to facilitate the linkage of education with business, industry, and labor. Cooperation between vocational-technical education and labor may be accomplished in a number of ways.

Advisory Committee

The advisory committee is a common linkup agent in curriculum planning. Langford (1968) in a study to identify approaches used to establish vocational-technical curricula in selected public junior colleges concluded that:

The use of the general advisory committee to advise on new requirements and to set priorities for curriculum is associated to the maintenance of the vocational-technical program.

There should be an occupational advisory committee established for each program. This committee serves as a communication channel between the college and the community. It also works with the administration in listing specific skills and equipment related technical information for the courses.

The members of lay advisory committees should represent both employers and employees and present different points of view. A vocational education administrator should be appointed to coordinate the activities of the committee. (p. 128-2)

Laiken (1970) investigated the role of advisory committees in State University of New York Agricultural and Technical Colleges as perceived by the committee members. Data were gathered using a questionnaire submitted to 314 committee members. The response rate was 81 percent. The committee members perceived their most important function to be in the area of curriculum needs, goals, content, and revision.

Brown and Faulkenberry (1970) designed a study to determine the opinions of vocational agriculture teachers

regarding the use of advisory committees. A questionnaire was used to gather data from 100 randomly selected Mississippi vocational agriculture teachers. The response rate was 75 percent. Based on the mean scores of the responses for the benefits of having an advisory committee, the data indicated that of the top five mean scores, two were related to curriculum development. Twenty-seven activities were given scores. This research pointed out that vocational agriculture teachers were of the opinion that advisory committees are needed for curriculum development assistance.

Industry Associations

The focus of this study, where industry associations involvement in vocational horticulture curriculum matters, has support in terms of involvement of other industry associations in curriculum matters. Burt and Lemminger in Voluntary Industry Involvement in Public Education (1976) reported that there are many industry, business, and labor linkages with education. One of the first reported linkages in this country was that of the National Association of Manufacturers. In 1897 an education committee was formed to link schools and industry about a linkage. (1976) The American Iron and Steel Institute was a pioneer in establishing a trade-unionism education department to develop industry-education relationships. The National Association for Industry-Education Cooperation (NAIEC) has developed a strong partnership

between industry and education. The purposes of the NABEC as outlined in their bylaws are to

1. Provide a national organization for representation of business and industry who are working in the field of educational relations;
2. Consider ways in which industry can cooperate with educational organizations, and to endeavor to develop and promote high ethical standards in such relationships;
3. Formulate plans and procedures whereby industry participation is provided in accordance with acceptable educational standards;
4. Ascertain and identify school and other educational requirements in which industry might direct cooperative assistance efforts;
5. Foster adherence to educational standards and cultivate in the development of useful and acceptable business-sponsored instructional materials;
6. Ascertain how educational organizations can assist business and industry in efforts to cooperate with school systems; and
7. Communicate with educators and the general public on mutual advantages of industry-education cooperation. (pp. 11-15)

The NABEC is dedicated to bringing industry and education together. This association is concerned that the inter-face between industry and education is less than effective. The use of industry-education councils is seen as a means of improving the response of schools to the needs of industry.

The American Association of Nurserymen, the national organization representing the nursery and landscape

industry, has supported many industry-education programs. Investment has included ordered books for educators for instructional materials and registration costs at meetings, invitations to seminars, and provisions for providing educators with industry data.

Other associations reporting industry/education linkages included the Associated Landscape Contractors of America (Erop, 1981). The ALCA has worked with educational institutions to develop a model curriculum to help bring theory and practice closer together. The National Restaurant Association has stimulated more active communication and collaboration between schools and food service operators (NRA, 1982g). The National Restaurant Association proposed the establishment of joint NRA/educator councils at the state level modeled after the national council. The national council is comprised of eight educators and eight industry representatives and is responsible for increasing industry participation in vocational education. An example of an industry/industry/education linkage is the employee development and training program at Ford Motor Company (Garnett, 1982). The Ford Program has its headquarters at the Henry Ford Community College in Michigan. The intent of this program was to allow the nation's community colleges to provide development and training programs for the 200,000 Ford employees in the 85 Ford plants in the United States. The Ford Motor Company, the United Autoworkers Union, and several

community colleges were instrumental in the development of this cooperative venture involving industry and education.

Goldner (1978) studied the development of a two-year community college data processing curriculum using an advisory committee. The local Data Processing Management Association (DPMA) provided information concerning curriculum development. Seventy-two percent of the 144 open questions responded to a mailed questionnaire. The findings indicated agreement between the content of the curriculum of the community colleges studied and the requirements of the local data-processing industry.

Rebelle and Parr (1978) designed a research project to identify occupations across three related occupational training in Broward County, Florida. The data were collected with the cooperation of the local industrial board, the chamber of commerce, and the county union league. Cooperation with associations representing industry and the community holds great potential as a resource for curriculum development. Rye (1943) cited the American Society of Association Executives estimate that there are approximately 12,000 local, state, regional, and national trade associations.

Curriculum Revision

This study was designed to look at curriculum revision as well as curriculum development. As was evident in the curriculum models presented earlier, curriculum is

usually considered the last step in curriculum development. In vocational-technical education revision is necessary to maintain relevance with the needs of industry. Industry is ever-changing, and therefore curricula must stay abreast of these changes.

The revision of a curriculum logically involves the evaluation of a curriculum. The evaluation of a curriculum must start with the evaluators developing guidelines for the process. Griggs (1981) suggested that the evaluation process should be similar to the planning process, that is, the process must be systematic. Curriculum evaluation, to be systematic, should approach evaluation in various ways. Methods would include formative or summative evaluation, internal or macroevaluation, process or product evaluation, and internal or external evaluation. These factors would affect the approach to curriculum evaluation and the use of the collected information.

Participation in the revision process was an important consideration in this study. Davis (1984) stated that those individuals involved in curriculum revision are from two groups, either from within the school system which would include teachers, administrators, and curriculum specialists, or from outside the system which would include government agencies, accrediting associations, consultants, professional organizations, colleges and universities, and lay groups. In vocational-technical education the most prominent external group is the advisory committee

(Christensen, 1980; Lohren, 1976; Mason, 1978). There is a definite need for this external involvement, but care must be taken to involve teachers in the process. Tyler (1979) pointed out that curricula developed or revised by external agencies were "rarely implemented as intended" (p. 43).

Rees and Fossel (1984) presented some guiding values for planning a vocational curriculum. A portion of their system seems appropriate for curriculum revision as well. Questions that would be asked are: "Will completion of the curriculum result in economic or employment advantage(s) for graduates?", "Are the skills to be taught applicable to more than one firm?", "Is the cost of occupational training for society and to the individual acceptable?" (p. 34).

The evaluation of a vocational curriculum is complicated by the fact that instruments to facilitate the process are not generally available. Maritz (1971) developed a conceptual model to obtain performance measurements of vocational-technical curricula. The model involved the verbalizing of performance tasks and working levels of an occupation, which were part of a curriculum, for validation by masters of that occupation.

Curriculum revision should be responsive to the input of the graduates of a program and the industry in which the graduates are employed. Hart (1987) provided examples of facilitating this source of input for curriculum

evaluation. This technique usually involves the gathering of information through surveys from graduates and employers.

Oliver (1948) indicated that information from graduates concerning what experiences were most and least valuable and what changes in the curriculum would be recommended as adequate information for curriculum revision.

Burt (1967) cited the example of the Electronics Industries Association Partnership with the Southern Technical Institute in developing and revising a social curriculum for training of television service technicians. Burt concluded that input from national trade associations and professional organizations concerning the curriculum of a local educational institution was important.

Kutnerbaum (1973) investigated curriculum development in area vocational schools to recommend evaluation procedures for area vocational education curricula. Questionnaires were sent to a universal sample of teachers, directors, and curriculum coordinators in New Jersey, New York, and Pennsylvania. Curriculum evaluation was found to be a continuous process involving school personnel, advisory committees, industry representatives, students, and the public.

Curriculum revision in vocational-technical education should be a continuous process. It should start with the development of the curriculum and continue until that curriculum is discontinued. The method of evaluation and revision should be developed by those closest to the

curriculum with input invited from all concerned parties. The revision of vocational-technical curricula must be looked at as the means to ensure responsiveness and relevance to industry's needs.

SUMMARY

The literature review was intended to develop the basic background knowledge necessary to undertake this study. The concepts, definitions, models, and procedures cited provided the framework upon which this study developed.

CHAPTER III DESIGN OF THE STUDY

Questions to be Answered

The study was descriptive and was designed to obtain answers to the following questions.

1. How many state nursery associations are involved in the development and revision of ornamental horticulture curricula at postsecondary institutions of less than baccalaureate level?
2. What is the type and extent of the involvement?
3. What is the nature of the use of nursery association input in those states indicating association-education linkage?
4. What are the perceived functions of nursery associations and educational institutions in curriculum decision making?

Methodology

The data were gathered using mailed questionnaires. Questionnaires were mailed to the total population of all U.S. nursery association executives (p=41) and to the total population of all postsecondary institutions (p=218) identified by McJannet (1981) and Moss and Burke (1982) as those of less than baccalaureate level offering an ornamental horticulture program. The data collected were

went to answer the four study questions and to test seven hypotheses.

Hypotheses

The following null hypotheses were developed to test the statistical significance of the data. The first two hypotheses have four sub-parts in the form of research questions asked educators and nursery association executives concerning curriculum development and revision. The responses from the educators were compared to the responses of the nursery association executives to test for statistical differences.

Hypothesis 1. There were no differences between responses of educators and nursery association executives concerning their communication to develop a curriculum in ornamental horticulture.

Research questions asked of the educators were:

1. Have you ever contacted the state nursery association for help in developing your curriculum?
2. Did they provide helpful input?
3. Has the state nursery association contacted you seeking input into the development of your curriculum?
4. Were you responsive?

Research questions asked of nursery association executives were:

1. Have you ever been contacted by an educational institution?
2. Did you provide helpful input?

3. Have you ever contacted an educational institution to ask if you could help develop the curriculum?
4. Was the institution receptive?

Hypothesis 3. There were no differences between educators and nursery association executives concerning their communication to review a curriculum in commercial horticulture, with "review" substituted for "develop" the research questions asked of educators and nursery association executives were otherwise identical with the research questions for Hypothesis 1.

Hypothesis 4. There were no differences between educators and nursery association executives as to whether a state nursery association should have an opportunity to provide input concerning curriculum development.

Hypothesis 5. There were no differences between educators and nursery association executives as to whether a state nursery association should have an opportunity to provide input concerning curriculum reviews.

Hypothesis 6. There were no differences between educators and nursery association executives as to whether an educational institution should seek input from a state nursery association concerning curriculum development.

Hypothesis 7. There were no differences between educators and nursery association executives as to whether an educational institution should seek input from a state nursery association concerning curriculum reviews.

Findings 1. There were no differences between educators and nursery association executives as to whether there is sufficient cooperation between educational institutions and state nursery associations to provide graduates who the industry feels are well prepared.

Questionnaires

Two questionnaires were developed (Appendices A & B). The first questionnaire was designed to gather information from nursery association executives and the second was designed to gather information from educators. Items on the questionnaires were both structured and unstructured and designed to elicit facts and opinions.

Responses to items on the questionnaires allowed the data to be presented as the percentage of respondents indicating yes or no for an item, the ranking of items, the stating of opinion using a "likert type" scale, and the presentation of unstructured responses.

The items on the questionnaires were developed by the researcher. At the time of the study, the researcher served as an educator at the postsecondary level in the field of ornamental horticulture and as the executive secretary of a state nursery association. The questionnaire items represented the concerns and thoughts of an educator involved with curriculum matters and the needs of the ornamental horticulture industry as perceived by an executive secretary of a state nursery association. The format of the questionnaires, the structure of the items on the

questionnaires, and the distribution and collection methods were derived and developed from literature reviewed (Kry, 1978; Neely, 1983; Linsky, 1983).

Questionnaire development also involved proceeding to determine the appropriateness of the instruments in obtaining the information desired. The nursery association executive (NA) questionnaire was presented by mailing the questionnaire to seven former nursery association executives (Appendix C). The educational institution (EI) questionnaire was presented by mailing the questionnaire to 14 educators (Appendix D). These educators were selected as representatives of the population in the study and were asked not to respond to the questionnaire during the actual study. Both groups received a cover letter explaining the study and were asked to examine the questionnaires for ease of interpretation, clarity, completeness, and biases (Appendices E & F). The respondents were also asked to make suggestions to improve the questionnaires. The response from nursery associations was 100 percent and 69 percent from educational institutions. There were minor changes suggested in the format and the content of the questionnaires. The instruments with the recommended revisions were judged appropriate to gather the data from the two populations in the study.

Survey Population

The entire population of both groups was selected to be surveyed. Pitkanen (1976) defined a population as "any defined aggregate of objects, persons, or events, the

variables used as the basis for classification or measurement being specified" (p. 30). By observing more instances in a population than is possible in drawing a sample from the population, one can have greater confidence in drawing conclusions about the population (Gay, 1977).

The state nursery association population was 43. Four states were not included because they either lack nursery associations (Alaska, Wyoming) or an educational institution appropriate to this study (Maine, Vermont). The state of Maine was not included because of the role played by the researcher in the nursery association and as an educational institution within the state. The nursery association population included states such as Wisconsin with fewer than 100 members and California with over 2,000 members.

The educational institution population included 218 institutions. The institutions were located in the same states as the 43 nursery associations. The educational institution population showed diversity with some institutions having single faculty member departments and others having departments with 15-25 faculty members. Elemental horticulture programs were found in vocational-technical institutes, community colleges, and four-year universities.

Questionnaire Distribution and Response

The questionnaires were distributed by mail. The response rates are presented in Tables 1 and 2. Responses

offered by Linsky (1948) to stimulate responses to mailed questionnaires were used.

The nursery association questionnaire mailing was preceded by a letter from Tommy Sougar, president of the Nursery Association Executives (Appendix C). The letter urged participation. The questionnaire to both groups included cover letters explaining the importance of the study (Appendices B & D). Each cover letter was personally addressed. The confidentiality of the solicited information was stressed. The questionnaires were printed on colored paper, a suggestion by Linsky (1948) to improve response. The enclosed return envelopes had a stamp with the state bird and flower; this added a personal touch and a number of individuals indicated their approval. The first nursery association mailing included the Maine Nurseryman's Association Card as a token of appreciation from the researcher. After the initial mailing to both groups had been out two weeks, a second mailing with a cover letter and questionnaire was mailed to nonrespondents (Appendices J & K). The nursery association second mailing was followed up with a post card reminder to nonrespondents after 15 days. The educational institutions nonrespondents were sent a third letter and questionnaire. The tactics used in the questionnaire distribution were utilized in order to secure a return rate of at least 45 percent. Tables 1 and 2 present a summary of the questionnaire response data. The response for nursery associations was 84.4 percent.

after the two questionnaire mailings and a post card reminder. The response for educational institutions after two questionnaire mailings was 78.5 percent.

Table 1

Nursery Association Executives' Questionnaire
Response Rates

Questionnaire Mailed (n=25)	Response	Percentage
Response from first mailing	16	64.0
Response from second mailing	12	48.0
Total Response	28	84.4

Table 2

Educational Institutions Questionnaire
Response Rates

Questionnaire Mailed (n=25)	Response	Percentage
Response from first mailing	146	58.4
Response from second mailing	38	15.2
Response from third mailing	14	5.6
Total Response	198	79.2

The 84.4 percent rate from nursery association executives was judged sufficient to not be greatly affected by nonresponse. Response by 78.5 percent of the educational institutions, although greater than the initial goal, was not accepted as sufficient. Borg (1983) stated

that if more than 10 percent of the subjects fail to respond, the findings of a study could be altered considerably if they did respond and their responses were different from the initial respondents. We suggested that the nonrespondents be contacted to determine whether the nonrespondent group was different from the respondent group. A mailing containing a letter asking for cooperation and a copy of the questionnaire was sent to all of the educators not responding to the first two mailings (Appendix A). Fourteen educators responded to the mailing.

Chi-square analysis revealed that when comparing questionnaire item responses from mailings one and two with the responses from the educators receiving the third mailing, there were 13 items which were significantly different at the .05 level. These items were 1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 14, and 17. The responses from the first and second mailings were compared in a similar manner and significant differences were found between items 1, 11, and 15.

These results indicated that the nonresponding group of educators were different from those who responded previously. Borg (1981) suggested that this is a common sampling bias and it occurred because individuals having the most successful programs are most likely to respond first.

The nursery association response rate after two mailings, as previously mentioned, was 84.4 percent. The

responses from mailings one and two were compared and chi-square analysis revealed that items 4, 9, 14, 17, 18, and 19 were significantly different at the .01 level. These differences were, as shown, attributed to the fact that there are differences between those who respond first and those who respond later.

Because there were nonrespondents from each of the groups surveyed, the data collected using the questionnaire were interpreted as representing the responding educators and nursery association executives and not the entire population of each group. The presence of nonrespondents in mailed surveys is common and was the cause of nonresponse error in this study.

Data Analysis

The data met nonparametric assumptions by being either nominal or ordinal. Because the data were expressed in nominal or ordinal form, the data were less precise than data having values capable of being measured. Best (1977) indicated that nonparametric tests have less power than parametric tests. The power depends on the difference between the value presented in a hypothesis and the actual value (Siehl, 1980). Because nonparametric tests are less powerful, the null hypothesis is not as likely to be rejected, whereas parametric tests having greater power are more likely to detect departures from the null hypothesis (Johnson, R., 1977). There was a greater chance of a type II error using the nonparametric tests.

Because the responses were tabulated in the form of frequencies, the chi-square test was judged as being the most appropriate nonparametric method for analyzing the data (Johnson, R., 1971). The chi-square test was used to determine whether nursery association executives and educators differed in their responses to items on the questionnaire. Lee (1978) stated that "chi-square tests the significance of the differences between the obtained or observed frequencies and those which would be expected due to chance" (p. 12). A significant chi-square finding indicated that the variables being compared were independent of each other.

The responses to items 1-4 on the questionnaire from nursery associations and educational institutions were tabulated to determine the frequencies and percentages of yes or no responses. These data were the basis for testing Hypotheses 1 and 2.

The data were analyzed using the 1 x 2 chi-square test with Yates's correction for continuity. Lee (1977) indicated the Yates's correction should be used for a 1 x 2 table with one degree of freedom when any cell has fewer than 10 observations. The correction brings the expected and observed frequencies closer together and decreases the chi-square value.

Hypotheses 3-5 were tested using an R by C contingency table chi-square test. These hypotheses were tested to determine if there were significant differences of opinion

between nursery associations and educational institutions concerning curriculum development, curriculum revision, and perceptions of the effectiveness of educational institution/nursery association linkages.

The .05 level of significance was chosen for each of the chi-square tests. The hypotheses were not rejected if the calculated chi-square value did not exceed the critical value, thereby indicating that no statistically significant differences were found between educational institutions and nursery associations in their area responses. When a hypothesis could not be rejected, this indicated there was a relationship, but the degree of the relationship was not indicated by the chi-square test (Johnson, R., 1977).

The Tektronix 4010-series Computer with Plot 80 Statistics Volume 1 software was used for all chi-square tests.

Data were also tabulated and presented for the eleven listed items on the questionnaires not needing statistical treatment. The unstructured responses were examined and those of importance were presented within the format of the narrative chapter.

In summary, the methodology involved using mailed questionnaires. The questionnaires were distributed to two groups--educational institutions offering one-, two-, and three-year occupational apprenticeship programs at the postsecondary level and to state nursery associations

narratives. Data were collected and analyzed to obtain characteristics of each group for the purpose of developing a linkage model to facilitate curriculum development and revision.

CHAPTER IV RESULTS

Introduction

The data collected using the questionnaires provided information from each of the two populations surveyed. These data were analyzed individually and where appropriate comparisons were made between the two populations. This chapter presents the results of the data collection and analysis.

General Information

Survey Associations

Responses were obtained from 18 of the 45 state survey associations contacted. Four of those of the 18 returned questionnaires could not be used. The questionnaires were completed by executives within the associations. Twenty questionnaires were completed by the executive secretary, 11 by the executive director, three by the executive vice president, one by the president and executive secretary together, and two questionnaires did not include the respondents' position.

Data concerning the size of the association were collected. Five associations had fewer than 100 members, nine were within the range of 101 to 199, 17 were within the range of 200 to 499, and seven had a membership of over 500.

Educational Institutions

Questionnaires were sent to 214 educational institutions in 43 states. Returns were obtained from 198 institutions in 41 states. There was a range of one to sixty-one in the number of institutions within each state offering post-secondary occupational education programs at least thru the baccalaureate level (Table 4). The response rate by state ranged from zero to 100 percent.

Responses were received from 181 educational institutions. Twenty-three of the questionnaires were returned indicating there was no program meeting the description provided on the questionnaire.

One hundred sixty-seven respondents indicated the title of the position they held. Figures shown in Table 3 present the number of individuals classified as instructor (professor, teacher), chairperson (program director, coordinator), and administrator (dean, director). Most of the respondents were instructors or chairpersons, and many chairpersons also acted as instructors.

Table 3
Status of Educational Institution Respondents

	Number	Percentage
Instructor	78	46.8
Chairperson	75	44.9
Administrator	12	6.9
	165	100.0

Table 2
Educational Institution Distribution and Response Rate

State	Number of Participating	Number Responding	Percentage Responding
Alabama	4	3	75.0
Arizona	7	3	42.9
Arkansas	3	3	100.0
California	61	47	77.1
Colorado	8	8	100.0
Connecticut	1	1	100.0
Delaware	1	1	100.0
Florida	17	18	105.9
Georgia	4	3	75.0
Hawaii	8	3	40.0
Idaho	3	3	100.0
Illinois	18	13	72.2
Indiana	1	1	100.0
Iowa	7	5	71.4
Kansas	3	3	100.0
Kentucky	1	1	100.0
Louisiana	1	0	0
Maryland	4	4	100.0
Massachusetts	5	5	100.0
Michigan	3	3	100.0
Minnesota	7	4	57.1
Mississippi	3	3	100.0
Missouri	3	1	33.3
Montana	3	3	100.0
Nebraska	1	0	0
Nevada	1	1	100.0
New Hampshire	1	1	100.0
New Jersey	2	2	100.0
New York	8	5	62.5
North Carolina	13	12	92.3
North Dakota	1	1	100.0
Ohio	4	3	75.0
Oklahoma	4	3	75.0
Oregon	8	3	37.5
Pennsylvania	5	5	100.0
Rhode Island	1	1	100.0
South Carolina	4	1	25.0
South Dakota	1	1	100.0
Tennessee	1	0	0
Texas	14	6	42.9
Utah	1	1	100.0
Virginia	1	1	100.0
Washington	14	9	64.3
West Virginia	4	4	100.0
Wisconsin	4	4	100.0
	238	174	

Survey Data

SYNOPSIS FINDINGS

This section included data obtained using the questionnaire and was analyzed by comparing the responses from the two groups surveyed. The comparisons formed the basis for the hypotheses testing.

Hypothesis 1. There were no differences between responses of educators and nursery association executives concerning their communication to develop a curriculum in organized kindergarten.

Research questions asked of the educators were:

1. Have you ever contacted the state nursery association for help in developing your curriculum? (Table 4)
2. Did they provide helpful input? (Table 4)
3. Has the state nursery association contacted you seeking input into the development of your curriculum? (Table 4)
4. Were you receptive? (Table 4)

Research questions asked of nursery association executives were:

1. Have you ever been contacted by an educational institution? (Table 4)
2. Did you provide helpful input? (Table 4)
3. Have you ever contacted an educational institution to ask if you could help develop its curriculum? (Table 4)
4. Was the institution receptive? (Table 4)

The data in Tables 3 and 4 showed that 31.3 percent of the educational institutions surveyed have contacted nursery associations concerning curriculum development and that 79.7 percent of those educational institutions indicated they were provided with helpful input. Greater than one-half (53.4 percent) of the nursery association respondents indicated they have been contacted by educational institutions concerning curriculum development and that 85 percent of those nursery associations provided input. The responses to research question one by educators and nursery association executives were not significantly different. Statistical analysis indicated that there was agreement between educators and nursery association executives concerning curriculum development communication by educators (Table 3). The responses by educators and nursery association executives to research question two concerning nursery association input into curriculum development were significantly different (Table 4).

Table 3
Educational Institution Curriculum Development Contact
Research Question 1

	Edu.		Nur.	
	N	%	N	%
*E.I. - Contacted *N.A.	50.3	42	49.1	79
E.I. - Contacted by N.A.	53.4	30	47.4	18

Chi-square = .0008, $\alpha = 1$, $p = .0179$.

*E.I. (Educational Institutions), N.A. (Nursery Association)

Table 4
Curriculum Development Input
Research Question 2

	Yes		No	
	f	%	f	%
E.I. = Helped input?	44.8	80	1.2	1
N.A. = Provide input?	45.8	17	15.0	1

Chi-square = 18.8543, $df = 1$, $p = .0004$.

The educational institutions indicated that personal contact was the most common method of receiving input and the nursery associations indicated that advisory committee membership was the most common method of providing input (Table 3).

Table 5
Method of Curriculum Development Input

	Ed. Inst.		Nur. Assoc.	
	f	%	f	%
Personal Contact	45.4	48	41.2	7
Written Contact	4.2	5	0	0
Advisory Committee	44.4	16	18.8	18

The data in Tables 4 and 5 showed that 22.4 percent of the nursery associations surveyed have contacted educational institutions seeking input into curriculum development; the nursery associations reported 41.2 percent of the educational institutions were receptive. Of the educational institutions contacted, 16.2 percent indicated they had been contacted by nursery associations seeking to provide

input into curriculum development. All the educational institutions reported they were receptive when contacted. The responses to research question three by educators and nursery association executives were not significantly different. Statistical analysis indicated that there was agreement between educators and nursery association executives concerning curriculum development communication by nursery association executives (Table 8). The responses by educators and nursery association executives to research question four which sought to determine educational institutions receptiveness concerning curriculum development were significantly different (Table 9).

Table 8
Nursery Association Curriculum Development Contact
Research Question 3

	Yes		No	
	E	N	E	N
E.I. = Contacted by N.A.?	18.3	28	61.6	115
N.A. = Contacted E.I.?	12.4	12	67.6	23

Chi-square = 8.3476, $\chi^2 = 1$, $p = .0113$.

Table 9
Reaction to Contact
Research Question 4

	Yes		No	
	E	N	E	N
E.I. = Receptive?	100	24	0	0
N.A. = E.I. receptive?	61.6	12	14.7	3

Chi-square = 14.8134, $\chi^2 = 1$, $p = .00006$.

Hypothesis 1. There were no differences between the responses of educators and nursery association executives concerning their communication to revise a curriculum in ornamental horticulture.

Research questions asked of the educators were:

1. Have you ever contacted the state nursery association for help in revising your curriculum? (Table 10)
2. Did they provide helpful input? (Table 11)
3. Has the state nursery association contacted you asking input into the revision of your curriculum? (Table 12)
4. Were you receptive? (Table 14)

Research questions asked of nursery association executives were:

1. Have you ever been contacted by an educational institution asking you for help in revising its curriculum? (Table 10)
2. Did you provide helpful input? (Table 11)
3. Have you ever contacted an educational institution to ask if you could help revise its curriculum? (Table 12)
4. Was the institution receptive? (Table 14)

The data in Tables 10 and 11 showed that 44 percent of the educational institutions surveyed have contacted nursery associations concerning curriculum revision and that 58.3 percent of the educators indicated they were provided with helpful input. Of the nursery association

educators indicated 55.5 percent indicated they had been contacted by educational institutions concerning curriculum revision and 55.1 percent of these survey associations provided input. The responses by educators and survey association executives to research questions one and two were not significantly different. Statistical analysis indicated that there was agreement between educators and survey association executives concerning curriculum revision communications by educators (Table 18). Both groups of respondents were also in agreement concerning survey association input into curriculum revision (Table 19).

Table 18
Educational Institution Curriculum Revision Contact
Research Question 1

	Yes		No	
	1	2	1	2
E.L. = Contacted E.A.s?	44.8	70	55.2	30
E.A. = Contacted by E.L.s?	45.8	23	54.2	15

Chi-square = 4.8194, $df = 1$, $p = .0279$.

Table 19
Curriculum Revision Input
Research Question 2

	Yes		No	
	1	2	1	2
E.L. = Helpful input?	55.5	45	44.5	1
E.A. = Provide input?	55.7	12	44.3	1

Chi-square = .8677, $df = 1$, $p = .3532$.

The educational institutions indicated that advisory committee membership was the most common method of receiving input and the nursery associations executives indicated that personal contact and advisory committee membership were equally important methods of providing curriculum revision input (Table 13).

Table 13
Method of Curriculum Revision Input

	Educational Institutions		Nursery Associations Executives	
	Per. Contact	Advisory Committee	Per. Contact	Advisory Committee
Personal Contact	44.2	10	50	11
Written Contact	5.2	4	0	0
Advisory Committee	47.7	11	50	11

The data in Tables 13 and 14 showed that 14.8 percent of the nursery associations surveyed have contacted educational institutions seeking input into curriculum revisions. The nursery associations executives reported 71.8 percent of the educational institutions were receptive. Of the educational institutions contacted, 11.1 percent indicated they had been contacted by nursery associations seeking to provide input into curriculum development. All of the educational institutions reported they were receptive when contacted. The responses by educators and nursery association executives to research questions three and four were significantly different. Statistical analysis revealed that there was a significant difference between the

responses of educators and nursery association executives concerning curriculum revision communication by nursery association executives (Table 13). The responses from both groups were statistically different concerning the responsiveness of educational institutions to nursery association input into curriculum revision (Table 14).

Table 13
Nursery Association Curriculum Revision Contact
Research Question 3

	Yes		No	
	A	B	C	D
E.L. = Contacted by N.A.?	25.1	24	74.9	100
N.A. = Contacted E.L.?	26.8	14	73.2	24

Chi-square = 13.7544, df = 1, p = .0002.

Table 14
Reaction to Contact
Research Question 4

	Yes		No	
	A	B	C	D
E.L. = Responsive?	100	24	0	0
N.A. = E.L. Responsive?	76.8	10	23.1	0

Chi-square = 21.8288, df = 1, p = .000002.

Hypothesis 3. There was no difference between educators and nursery association executives as to whether a state nursery association should have an opportunity to provide input concerning curriculum development (Table 15).

The data in Table 18 showed that 77.1 percent of the educators and 77.4 percent of the nursery association executives strongly agreed or agreed that a state nursery association should have an opportunity to provide input concerning curriculum development. Statistical analysis indicated that there was not a significant difference between the responses of the educators and the nursery association executives.

Table 18
Educational Institutions/Nursery Association
Curriculum Development Input Opinions

Statement: A state nursery association should have an opportunity to provide input concerning curriculum development.

		<u>Response</u>				
		<u>Strongly Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
E.I.	N	45	74	3	3	0
	%	51.8	45.7	3.6	3.2	0
N.A.	N	15	17	1	0	0
	%	51.8	49.8	3.7	0	0

Chi-square = 1.1847, df = 1, p = .7044.

Hypothesis 4. There were no differences between educators and nursery association executives as to whether a state nursery association should have an opportunity to provide input concerning curriculum revision (Table 18).

The data from Table 18 showed that 55.8 percent of the educators and 77.1 percent of the nursery association

executives strongly agreed or agreed that a state nursery association should have the opportunity to provide input concerning curriculum revision. Statistical analysis indicated that there was not a significant difference between the responses of the educators and the nursery association executives.

Table 18
Educational Institution/Nursery Association
Curriculum Revision Input Opinions

Statement: A state nursery association should have an opportunity to provide input concerning curriculum revision.	
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		<u>Response</u>			
		<u>Strongly Agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
<u>Eds.</u>	<u>N</u>	85	67	5	5
	<u>%</u>	33.3	40.3	1.3	3.1
<u>Nurs.</u>	<u>N</u>	14	36	3	0
	<u>%</u>	43.3	34.1	2.7	0

Chi-square = 8.8188, $df = 3$, $p = .0304$.

Hypothesis 3. There were no differences between educators and nursery association executives as to whether an educational institution should seek input from a state nursery association concerning curriculum development (Table 17).

The data from table 17 showed that 88 percent of the educators and 74.4 percent of the nursery association executives strongly agreed or agreed that educational

institutions should seek input from state nursery associations concerning curriculum development. Statistical analysis indicated that there was not a significant difference between the responses of the educators and the nursery association executives.

Table 17
Educational Institution/Nursery Association
Curriculum Development Input Response

Statement:	Response					
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
E.1.	N	80	84	3	3	0
	n	51.5	49.5	1.5	1.5	0
N.A.	N	15	21	2	0	0
	n	15.5	16.5	1.5	0	0

Chi-square = 4.8548, $df = 1$, $p = .0283$.

Hypothesis 4. There were no differences between educators and nursery association executives as to whether an educational institution should seek input from a state nursery association concerning curriculum revision (Table 18).

The data in Table 18 showed that 12.5 percent of the educators and 15.5 percent of the nursery association executives strongly agreed or agreed that educational institutions should seek input from state nursery

associations concerning curriculum revision. Statistical analysis indicated that there was not a significant difference between the responses of educators and career association executives.

Table 18
Educational Institutions/Career Association
Curriculum Revision Input Opinions

Statements		Responses			
		Strongly Agree	Agree	Indecided Disagree	Strongly Disagree
Eds.	N	80	68	7	4
	n	50.0	42.5	4.4	3.3
C.A.s.	N	15	20	3	0
	n	37.5	50.0	7.5	0

Chi-square = 0.4187, $df = 1$, $p = .5195$.

Hypothesis 7. There were no differences between educators and career association executives as to whether there is sufficient cooperation between educational institutions and state career associations to provide graduates who the industry feels are well prepared (Table 18).

Statistical analysis indicated there was not a significant difference between the responses of educators and career association executives concerning their opinion that there was sufficient cooperation between educational institutions and state career associations to provide

graduates which the industry feels are well prepared (Table 18). The responses from educators showed 48.8 percent strongly agreed or agreed, 18.8 percent were undecided, and 32.4 percent disagreed or strongly disagreed. The responses from nursery association executives showed 38.8 percent strongly agreed or agreed, 18.8 percent were undecided, and 42.4 percent disagreed or strongly disagreed.

Table 19
Educational Institutions/Nursery Association
Cooperation Opinions

Statement: There is sufficient cooperation between educational institutions and state nursery associations to provide graduates which the industry feels are well prepared.						
		<u>Response</u>				
		<u>Strongly</u>				<u>Strongly</u>
		<u>Agree</u>	<u>Agree</u>	<u>Undecided</u>	<u>Disagree</u>	<u>Disagree</u>
E.1-	E.	33	45	33	34	14
	%	28.3	38.8	28.8	28.8	8.8
E.2-	E.	3	13	13	10	1
	%	7.8	10.8	11.8	8.8	2.8

Chi-square = 11.8364, $df = 4$, $p = .0001$.

Questionnaire Responses

The responses to questions five through twelve on the survey distributed to educators were tabulated in Table 20. The results indicated that the majority (81.3 percent) of the educational institutions surveyed provided educational

Table 18
Educational Institution Responses to
Questionnaire Items Five through Twelve

	n		%	
	Yes	No	Yes	No
5. Do you provide educational programs (short courses, workshops, etc.) for the industry?	96	43	81.3	35.8
6. Do you allow individuals from industry to attend classes part-time?	117	26	87.5	18.7
7. Do the majority of your students join the state nursery association (before a student category of membership is available)?	18	138	12.3	88.7
8. Do you have a student chapter of the state nursery association?	3	148	2.3	88.8
9. Does industry use your educational institution to provide instruction for its professional certification program?	33	131	22.4	76.6
10. Does the state nursery association aid you in placing graduates on the job?	98	187	71.8	68.2
11. Do you have a faculty member or committee responsible for maintaining communication with the state nursery commission?	81	78	62.3	47.7
12. Do faculty members serve on nursery association committees?	47	186	31.8	88.8

program use the ornamental horticulture industry and that most institutions (40.3 percent) allow individuals from industry to attend classes on a part-time basis. Very few educators (11.3 percent) indicated the majority of their students joined state nursery associations. Of the educational institutions surveyed 21.4 percent indicated that industry used their facilities to provide instruction for its professional certification program. Less than one-third (21.8 percent) of the educational institutions surveyed were of the opinion that the state nursery association aided them in placing graduates on the job. Approximately one-half (52.3 percent) of the educational institutions surveyed maintained a line of communication with the state nursery association. Less than one-third (31.4 percent) of the educational institutions surveyed had faculty members serving on nursery association committees.

The responses to questions nine through fourteen on the survey distributed to nursery association executives were tabulated in Table 21. Of the nursery associations surveyed, 49.3 percent sponsor programs to which educators and students were invited. Nursery association membership for educators was offered by 48.3 percent of the nursery association respondents, and 34.3 percent have a category of membership for students. Of the nursery associations offering certification programs, 38.3 percent indicated that they have utilized educational institutions as a training site. The majority (59.3 percent) of the nursery

Table 21
Library Association Responses to
Questionnaire Items Five Through Twelve

	N		%	
	Yes	No	Yes	No
5. Does your association sponsor programs to which teachers are invited?	34	4	45.3	38.3
6. Does your association sponsor programs to which students are invited?	35	3	48.1	7.9
7. Does your organization have a membership category for educators?	33	13	48.3	39.3
8. Does your organization have a membership category for students?	13	23	34.3	65.6
9. Does your organization have a professional certification program for its members?	26	12	48.4	31.6
10. If your answer to Question 9 is YES, is training offered through an educational institution?	18	16	36.3	61.3
11. Do you provide scholarships for educational institutions students?	33	16	43.3	37.8
12. Does your association aid educational institutions in placing graduates on the job?	25	13	55.3	44.7
13. Do you have an individual or committee responsible for maintaining an avenue of communication with educational institutions?	30	7	63.1	36.9
14. Do you have any students working on association committees?	26	6	63.3	36.7

associations surveyed offer scholarships to underserved horticulture students. Over one-half (56.8 percent) of the nursery associations surveyed indicated they did educational institutions in planning graduates. There was an individual or committee responsible for maintaining an extent of communication with educational institutions in 81.1 percent of the nursery associations responding. Of the nursery associations surveyed, 81.3 percent indicated they had educators serving on association committees.

Item 14 on the questionnaire asked the respondents to rank the following as to the best method of establishing a nursery association/educational institution linkage: personal contact, written contact, advisory committee membership. Both educational institutions and nursery association respondents ranked personal contact first and advisory committee membership second.

Item 15 was an open-ended question that asked the respondents to present one factor that would foster more effective involvement between educational institutions and nursery associations and, in turn, provide educational programs closely linked to industry's needs. Sixty-one percent of the educators and 73.7 percent of the nursery associations executives responded to this question.

The factors necessary for linkage development from the educational institution perspective were categorized in rank order according to frequency of mention (Table 11). Improved communication and greater involvement by nursery

association members in educational matters were the most common factors. Of the educational institutions responding, 14.3 percent indicated that advisory committee membership by nursery association members was the most important factor in developing a linkage between industry and education. Specific suggestions are discussed in Chapter V.

TABLE 23
Nursery Association/Educational Institution
Linkage Development
Educational Institution Perspective

Rank	Factor	n	%
1	Improved communication.	25	28.6
2	Greater involvement by nursery associations in educational matters.	20	24.0
3	Nursery association membership on educational institutions advisory committee.	21	26.3
4	Greater involvement by educators in nursery associations.	13	13.0
5	Greater funding and administrative support for the educational institution.	7	8.4
6	Greater involvement of educators in the nursery industry.	3	3.4
7	Miscellaneous suggestions.	14	15.2

The factors necessary for linkage development from the nursery association perspective were categorized in rank order according to frequency of mention (Table 23). The nursery association respondents ranked communication

and involvement by educators in the nursery industry and nursery associations as being the most important factors to foster linkage development. The nursery association executives also recognized the importance of their involvement in educational matters. Specific suggestions are discussed in Chapter V.

Table 23
Nursery Association/Educational Institution
Linkage Development
Nursery Association Perspective

Rank	Factor	n	%
1	Improved communication.	8	28.6
2	Greater involvement of educators in the nursery industry.	7	25.0
3	Greater involvement by nursery associations in educational matters.	5	17.9
4	Greater involvement of educators in nursery associations.	4	14.3
5	Greater funding for educational institutions.	3	10.7
6	Unrealistic suggestions.	1	3.6

CHAPTER 7 CONCLUSION

Introduction

The information presented in the previous chapters was drawn together in this chapter to provide a basis for an industry/education linkage model. The curriculum theory presented in the first two chapters was integrated with the information derived from the survey instrument. An interpretation of the survey results provided the development of the linkage model.

Curriculum Development

Both the educational institution and nursery association questionnaires examined the views of educators and state nursery association executives concerning curriculum development. The responses by both groups to the four items (Nursery Association 1, 2, 15, 17; educational institution 1, 2, 13, 18) on each questionnaire concerned with curriculum development were very similar. Comparisons of the responses to the same items on the two questionnaires revealed there were no significant differences at the .05 level. Approximately one-half (51.7 percent) of the educators have contacted a state nursery association asking for help in curriculum development; a similar proportion (51.7 percent) of nursery association executives indicated

they have been contacted. These results must be interpreted with the understanding that there is only one nursery association in each state, and the number of educational institutions in each state varies from one to 61. Greater than 77 percent of the respondents from both groups (87.1 percent of the educators and 83.4 percent of the nursery association executives) strongly agreed or agreed that state nursery associations should have input in curriculum development. Ninety-five percent of the educators and 94.8 percent of the nursery association executives responding strongly agreed or agreed that educators should seek input from state nursery associations concerning curriculum development. The responses to the item in the questionnaire concerned with linking educators and nursery associations for the purpose of curriculum development showed that collaboration was supported by both groups. Although this support was present, the data indicated there was resistance on the part of nursery associations to contact educational institutions to provide input concerning curriculum development. Of the educators responding 14.2 percent indicated they had been contacted, and 32.4 percent of the nursery association executives indicated they had initiated contact. Of the nursery associations initiating contact, 45.3 percent indicated the educational institution was receptive. Personal contact and advisory committee membership were the most common contact methods used by both groups. The educational

Institutions ranked personal contact first, and the nursery associations ranked advisory committee membership fifth. Both respondent groups (educational institutions/ nursery associations) indicated there was a need for increased contact. The results supported the contention that written contact may not be a very effective means of linking industry and education for the purpose of curriculum development.

The survey revealed that there was a significant difference in response as to whether the input from nursery associations concerning curriculum development is helpful. Although there is a significant statistical difference in response, 59.8 percent of the educational institutions thought the nursery association input was helpful and 85 percent of the nursery associations thought the input they provided was helpful. The majority of both groups indicated that input from nursery associations is helpful.

Curriculum Revision

The views of educators and nursery association executives concerning curriculum revision were examined. Four items (Nursery Association 2, 4, 18, 19; Educational Institutions 3, 5, 14, 19) on each questionnaire were concerned with curriculum revision. Of the educators responding, 45 percent had contacted nursery associations for help in curriculum revisions, and 59.8 percent of the nursery associations indicated they had been contacted. Greater than 85 percent of the respondents from both

groups (85.4 percent of the educators and 85.3 percent of the nursery association executives) strongly agreed or agreed that the state nursery association should have an opportunity to have input into curriculum revision. Greater than 80 percent of the respondents from both groups (88.3 percent of the educators and 88.1 percent of the nursery association executives) strongly agreed or agreed that educational institutions should seek input from state nursery associations concerning curriculum revision. As was the case with curriculum development input, the views of both groups were not substantiated by their reported actions. Contact between the two groups for the purpose of curriculum revision activities was low: 13.1 percent of the educators and 34.4 percent of the nursery association executives responded indicating action had taken place. Of the nursery associations indicating contact, 74.4 percent reported that the educational institution was receptive. Educational institutions respondents indicated that advisory committee membership was the most common method of input and nursery association respondents reported that personal contact and advisory committee membership were equally as important. Both groups indicated that personal contact and advisory committee membership should be ranked first and second, respectively, as methods of establishing a nursery association/educational institution linkage. This supported the previous conclusions concerning the method

of input for curriculum development. Personal contact was the most desirable method of linking industry and education for the purpose of curriculum revision.

The data supported the contention that both groups thought that input from industry associations concerning curriculum revision was helpful. The support of this premise for both curriculum development and revision provided a strong basis for developing the linkage model. Both groups agreed that industry associations were a valuable resource for curriculum development and revision. The model was developed with this premise supported and established.

The discussion to this point has considered eight issues on each of the questionnaires. The items were used in the development and subsequent testing of the first six hypotheses. The next section discusses those items on the questionnaires concerned with industry associations and educational institution characteristics.

Educational Institution Characteristics

Those characteristics that would foster closer ties between educational institutions and industry associations were the subject of eight items (questions 9 through 16) on the questionnaires. These items were categorized into four general areas: educational opportunities offered through educational institutions by industry associations, communication between educational institutions and industry associations, industry association membership for students,

and the role of industry associations in the job placement process of students.

A method of facilitating contact between educational institutions and industry associations is to create guidelines that promote contacts. By providing educational opportunities for industry association members, educational institutions can develop contacts. Data from the survey shows that 43.2 percent of the educational institutions surveyed provided educational programs for the organizational membership industry. These programs included workshops, short courses, and seminars. Of the educational institutions surveyed, 47.3 percent allowed individuals from industry to attend classes on a part-time basis. The responses to these items indicated that there was cooperation. Many industry associations have provided a professional certification program for their members. This has offered another opportunity for educational institutions to attract individuals representing industry to their institutions. The survey showed that 21.4 percent of the educational institutions surveyed are now providing instruction for industry association professional certification programs. Educational institutions must provide educational services to industry to promote closer links.

Communication is another ingredient in establishing and fostering educational institution/industry association ties. Of the educational institutions surveyed, 81.1

percent indicated they had a family member or committee responsible for maintaining communication with the state nursery association. Another possible communication link could be facilitated by having family members serve as nursery association committees. Of the educational institutions surveyed, 31.4 percent had individuals serving on nursery association committees.

By promoting student membership in the state nursery association, linkages would be established immediately. More importantly, with continued nursery association membership after graduation, the former student becomes a valuable resource person who is familiar with both the educational institution and the nursery association. Responses on the survey indicated there were few educational institutions (11.3 percent) where the majority of their students were nursery association members.

Nursery association aid in placing students on the job serves the educational institution and the student. This is another area where closer ties are needed. Of the educational institutions surveyed, 31.8 percent indicated that the state nursery association had aided them in the job placement function.

The discussion section has presented several areas where improved ties between educational institutions and nursery associations can be established. The key to improvement lies in providing an avenue to communication. A linkage model must address the issue of communication.

Survey Association Classification

In discussing the responses of the survey associations on survey items 5 through 14, a method of categorizing survey items was used. The categories were similar to those used in the previous section.

Approximately 98 percent (99.5 percent) of the survey association survey respondents indicated that they sponsored programs to which students and teachers were invited. This indicated that survey associations were a concerted effort to attract educators and students to survey association-sponsored programs.

In the previous section, survey associations' professional certification instructions was discussed. The survey association respondents reported that 88.4 percent of the survey associations have professional certification programs, and 38.3 percent of these survey associations offered training through an educational institution. This is an area where educational institutions could provide the survey associations with a necessary service and, in turn, develop closer ties with industry.

Communication between survey associations and educational institutions has been provided by survey associations to a greater extent than by educational institutions. Of the survey associations responding, 40.2 percent indicated that their association had an individual or committee responsible for maintaining an avenue of communication with educational institutions.

The majority (89.3 percent) of nursery associations indicated that they have educators serving on nursery association committees.

The low incidence of student membership in nursery associations reported in the previous section was supported by the nursery association survey results that indicated 34.1 percent of the respondents have a membership category for students. Educators were more fortunate since 86.5 percent of the respondents reported they had a membership category for educators. Nursery association membership for students and educators must be looked at as an important means to bring the two groups closer together.

Scholarships for ornamental horticulture students were offered by 43.2 percent of the nursery associations responding. This was another indication of nursery association/educational institution ties.

The nursery association executives reported that 88.3 percent of the associations and educational institutions is placing graduates on the job. Greater participation is needed.

Nursery association responses appeared to indicate that the state nursery associations had more adequately addressed the issue of maintaining a close relationship with educational institutions. This data must be interpreted knowing that there is only one nursery association

In each state, wherever there may be many educational institutions in a state,

The discussion in this section and the previous one was supported by the facts presented in Tables 10 and 11. These tables presented the level of concern that educational institutions and nursery associations have in the areas of communication and greater involvement with each other.

Nursery Association/Educational Institution Linkage Development: Educational Institution Perspective

This section will present and discuss some of the suggestions educators provided when asked to give one factor that would promote more effective involvement with the state nursery association in providing educational programs closely linked to the industry's needs. Table 12 presented a summary of the findings.

The most common response was concerned with communication. Most of the respondents suggested the best method of personal contact was by either inviting nursery association members to the educational institution or by having educators attend nursery association functions. One method to facilitate communication would be to designate one individual who is concerned with the needs of both industry and education to coordinate activities on a state-wide basis. This individual would serve to bring the two groups together.

The second most common response called for greater involvement of the nursery association in educational

institution activities. Serving on an advisory committee was a frequent suggestion. Five respondents indicated that nursery associations are concerned only with four-year institutions and that they don't want involvement with two-year institutions. The need to promote nursery association involvement with institutions of less than baccalaureate level was evident. The services provided to industry by the two-year institutions must be commensurate. Industry involvement with an educational institution may not occur until an industry realizes the relationship can be beneficial to them.

Educational institution involvement in nursery association activities was also proposed. One respondent suggested program funding should depend on involvement. A common concern voiced by educators was the lack of time and administrative support necessary to become involved with nursery association activities. Membership in the state nursery association was considered as a minimum level of involvement.

In conclusion, a few of the more succinct comments offered by respondents when asked to provide one factor to improve the relationship of nursery associations and educational institutions will be presented. "We are most satisfied--no suggestions." "For the nursery association to do something productive." "I don't know." "Knowing that we have a state nursery association." "Visit

the college side." "I'm not even certain there is a nursery association here."

Nursery Association/Educational Institutions Linkage
Development--Nursery Association Perspective

This section will present and discuss some of the suggestions nursery association executives provided when asked to give one factor that could promote more effective involvement with educational institutions in providing educational programs closely linked with industry's needs. Table XI presented a summary of the findings.

As was reported in the previous section, communication was ranked first as the one factor of greatest importance. This comment concerns indicated the importance of establishing and maintaining a communication link between the two groups. The other high ranking factors included involving industry and education in a constructive way. Involvement by educators in a state nursery association appeared to be limited by a lack of time, little support from administrators, and a feeling that educators were not accepted by industry associations. Limitations voiced by nursery association executives were similar to those of educators. In addition to those factors categorized in Tables II and III, miscellaneous comments were offered. Nursery association executives reported that dealing with the bureaucracy found in many educational institutions prevented involvement. The excessive time necessary to effect change was a factor important to industry. Short-timed institutions were unable to respond with

circumstances change quickly enough to satisfy the needs of industry. The major difference in the responses of educators and industry association executives was found in the direction of the response. Educators provided more positive responses aimed at improving their involvement with industry associations; industry association executives responded by citing factors that prevent improved involvement. A linkage model must address this difference in perspective.

Industry Association/Educational Institution Cooperation

Interpreting the opinions solicited in the questionnaire concerning the rating of the sufficiency of cooperation between industry associations and educational institutions indicated industry associations were satisfied with the job educational institutions were doing in preparing their students for employment. Statistically there was no significant difference in the opinions of both groups. There is closer agreement between the two groups when the agree and disagree responses were given than when the strongly agree, strongly disagree, and undecided responses were given (Table 38). Of the educational institutions surveyed, 38.3 percent indicated that they strongly agreed with the statement concerned with sufficient cooperation and 7.5 percent of the industry association respondents strongly agreed. Of the educational institutions surveyed, 4.9 percent strongly disagreed that there was sufficient cooperation, and 1.4

percent of the nursery association respondents indicated that they strongly disagreed with the statement. Nursery association respondents were less willing to indicate strong support for the statement and also less willing to disagree strongly with the statement. There was concern because greater than 11 percent of both groups (51.5 percent of the educators and 43.5 percent of the nursery association executives) either were undecided or disagreed that there was sufficient cooperation. Linkage is dependent upon agreement and, in this instance, the result, a properly prepared graduate, may hinge on proper curriculum development and revision.

CHAPTER VI
STATE NURSERY ASSOCIATION/VOCATIONAL-TECHNICAL
EDUCATION LINKAGE MODEL

Introduction

The study to this point has been directed toward looking at the relationships between nursery associations and educational institutions. As was previously reported, there are established relationships between nursery associations and educational institutions. The characteristics of the relationships formed the bases for the linkage model.

Linkage Benefits

Prior to presenting and discussing the model, a brief discussion of the benefits of developing an industry/education linkage model will be included. Gentry and Dove (1978) reported that the benefits of establishing a linkage between industry and education are incurred by several groups. Industry benefits by having better trained graduates from which to develop their workforce. The educational institution benefits by being able to provide more relevant educational programs, thereby doing a more effective job. The student and graduate receives better training and become more employable. The benefits of the linkage to all the concerned parties must be stressed to engender support.

Sanabky and Stone (1978) also discussed the barriers to establishing a linkage. Both educators and industry representatives perceived their lack of time to be a barrier. The process must be made as efficient as possible. There must be a gradual building of the commitment. Industry representatives find the bureaucracy of an educational system difficult to accept. Industry representatives become intimidated by the educational jargon so often used by educators. The benefits of the linkage must provide the incentive to overcome the barriers.

Industry/Educator Linkage Model

The industry/education linkage model proposed in Figure 3 addressed the relationship between state nursery associations and postsecondary educational institutions offering ornamental horticulture programs at less than baccalaureate degree level. This linkage model could be adapted to most industry/education situations where cooperation and coordination between the two parties was a goal.

An initial goal of a linkage is to establish a line of communication between the two groups. Prior to establishing the communication link there must be some prelinkage activity. At least one of the groups must perceive a need for the linkage. This group should designate an individual to make the initial contact. The data from this study indicated that the person in contact in the state nursery associations should be the executive



Figure 3. State Machine Architecture/Modeling Language Model.

secretary or executive director. In the educational institution the chairperson of the program or an instructor in the program would be the best contact. The method of contact should not be written; personal contact was preferred. The individual making contact should become the facilitator of the relationship. The penlinkage activity would serve to initiate contact and to identify an individual who would function as the facilitator for the linkage.

Once the initial contact is made, the aim of the linkage must be established. The proposed model presented here had curriculum development and revision as goals. The initial establishment of goals provided the parameters in which the linkage will operate. Another penlinkage activity which should occur involves the facilitator. A decision must be made concerning whether this position will be filled by one individual or whether there should be a representative from each group to act jointly. This researcher recommended that there be an individual designated from each group.

Prior to proceeding too far along in the relationship, a basis of support must be established. In the educational institution administrative support is necessary. The benefits of a linkage should be used to establish the administrative support necessary for success. The primary association representatives must first establish support within the higher levels (officers, executive

committee) of the association and eventually develop support from the membership. Without this prior consent to sustain the linkage, the job of the facilitator/s would be extremely difficult. From the start the emphasis must be on the benefits to be derived by all the parties involved. The relationship must be presented as being symbiotic.

The facilitator/s must move the relationship from the prelinkage mode into the linkage mode. The first linking activities are designed to promote communication. The activities for educators would include survey association membership, attendance at survey association functions, and speaking at survey association seminars, workshops, or courses. Survey association membership by educators has been stimulated in some states by either offering gratis membership or by reducing the dues. Reduced registration charges at survey association meetings also serve to promote greater involvement by educators. An important initial linking activity by the survey association high-age facilitator would be membership on an advisory committee at the program level. Ultimately advisory committee membership should include several survey association members. Other linking activities include guest lectures by survey association members and hosting field trips for the educators and their students. These linking activities serve to develop the communication ties that are prerequisite to a strong linkage.

Once communication is established, the facilitator/s must promote additional linking activities that will move the relationship on to a level where there is a spirit of cooperation. These linking activities require greater involvement by both groups. The activities for educators would include opening the educational facility to nursery association use, volunteering for nursery association committee membership, and promoting student interest in the nursery association. A very important gesture, which will lead to greater cooperation between the groups, involves the policy of inviting the nursery association to use the educational facility. Initial use may include using the facility for a meeting. This is an excellent opportunity to introduce the educational program to industry. As the linkage strengthens, the educational facility may be used to host seminars, workshops, and course work. Many nursery associations are becoming involved with professional certification and with this undertaking they find a need for educational expertise. The educator may aid the nursery association in developing instructional materials, serving as an instructor, and providing the facility in which to hold the program. Another linking activity concerns membership by ministers on nursery association committees. Many nursery associations have an education committee; this is a committee where educational expertise would be welcomed. This study has shown that very few educators serve on nursery association committees.

formation of student interest in the nursery association is another important linking activity. If student membership in the nursery association is available, this will provide the students with a means to associate with the industry. Where possible, student chapters of the nursery association should be formed. All of these activities may require a catalyst in order to occur. This is the job of the facilitator/s.

There are many linking activities that nursery association members could use to promote cooperation with educational institutions. There should be a willingness to use educational facilities for nursery association functions. The facilitator has an important function here in convincing the nursery association program planners to schedule meetings in selected facilities. There is a reluctance on the part of program planners to schedule meetings at places that are unfamiliar to them. Nursery associations should participate in the graduate placement process; this can function as an important linking activity. The nursery association can act as a coordinator in the placement function. Nursery association executives are provided with job openings on a regular basis. This activity would provide for the needs of the student in finding employment, of industry in finding qualified employees, and of the vocational-technical educational institution in fulfilling the graduate placement function. The relationships developed in this process would represent

Linkage Development. Nursery associations can become involved with providing individuals with the opportunity to learn a vocation by offering apprenticeships. Serving as a cooperative education site would be another linking activity for nursery association members. This important experiential learning opportunity serves to bring educators and industry representatives closer together.

The proposed model included an evaluation node. Evaluation must be aimed at improving the linkage. The facilitator's role serves this function. Utilizing feedback from the educational institution and the nursery association, the effectiveness of the linkage can be assessed. If the linkage is not serving its intended purpose, the facilitator will have to promote linking activities to strengthen the relationship. The functions will then be more easily served.

All of the linking activities serve to stimulate the interest on both sides in developing better communication avenues and in fostering cooperation. Once communication and cooperation has been achieved, a linkage has developed. A cooperative relationship has been established. The linkage can serve many functions. The focus of this study was concerned with curriculum development and revision. The linkage will be of most importance during the planning stages of curriculum development. The input gained at this point in the process will be of utmost importance during the implementation of the curriculum.

The curriculum development function may be difficult to achieve effectively, the reason being that curriculum development usually precedes the opportunity for any of the linking activities discussed. This researcher postulates that by developing industry/education linkages within the state, future curriculum development will be served by the existing linkages. Curriculum revision will certainly be served by linkage development. The linking activities will bring education and industry into contact on a regular basis. This contact will aid in obtaining input from industry in the curriculum revision process.

CHAPTER VII
SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

The purpose of this study was to assess the role of state nursery associations in planning and revising ornamental horticulture curricula at postsecondary institutions of less than baccalaureate level.

Objectives of this study were to

1. Determine the number of state nursery associations with involvement in curriculum development and revision.
2. Survey participating nursery associations to determine the type and extent of involvement.
3. Survey educational institutions of less than baccalaureate level offering ornamental horticulture programs within those states with nursery association involvement to determine the type of involvement.
4. Analyze the opinions of educational institutions and nursery associations concerning curriculum decision making.
5. Develop a linkage model of state nursery associations and educational institutions of less than baccalaureate level offering ornamental horticulture programs that would facilitate effective curriculum

development and revision.

Survey instruments were developed to examine the role of each group in the study. The instruments were piloted with the help of educators and forest nursery association executives. The questionnaires were distributed to 48 state nursery association executives and 218 educators. The final response rates were 84.4 percent from the nursery association executives and 75.7 percent from the educators.

The data from the survey instruments were tabulated and, where appropriate, comparisons were made between the two groups-- the chi-square test of independence at the .01 level was used. Seven hypotheses were offered and presented in the null form. They were:

Hypothesis 1. There were no differences between responses of educators and nursery association executives concerning their commitment to develop a curriculum in ornamental horticulture.

Research questions asked of the educators were:

1. Have you ever contacted the state nursery association for help in developing your curriculum?
2. Did they provide helpful input?
3. Has the state nursery association contacted you seeking input into the development of your curriculum?
4. Have you responded?

Research questions asked of nursery association executives were:

1. Have you ever been contacted by an educational

institutions?

3. Did you provide helpful input?
4. Have you ever contacted an educational institution to ask if you could help develop its curriculum?
5. Was the institution receptive?

The responses to the four research questions from the educators and the nursery association executives were compared. Statistical analysis revealed that there was agreement between the responses from both groups for research questions one and three and disagreement for research questions two and four.

Hypothesis 2. There were no differences between educators and nursery association executives concerning their willingness to review a curriculum in occupational horticulture.

Research questions asked of the educators were:

1. Have you ever contacted the state nursery association for help in reviewing your curriculum?
2. Did they provide helpful input?
3. Has the state nursery association contacted you seeking input into the revision of your curriculum?
4. Were you receptive?

Research questions asked of nursery association executives were:

1. Have you ever been contacted by an educational institution asking you for help in reviewing its curriculum?

3. Did you provide helpful input?
4. Have you ever contacted an educational institution to ask if you could help revise its curriculum?
5. Was the institution receptive?

The responses to the four research questions from the educators and nursery association executives were compared. Statistical analysis revealed that there was agreement between the responses from both groups for research questions one and two and disagreement for research questions three and four.

It was found that there were no statistically differences between educators and nursery association executives concerning their responses to the questionnaire items compared to test hypotheses three through seven.

Hypothesis 1. There were no differences between educators and nursery association executives as to whether a state nursery association should have an opportunity to provide input concerning curriculum development.

Hypothesis 2. There were no differences between educators and nursery association executives as to whether a state nursery association should have an opportunity to provide input concerning curriculum revision.

Hypothesis 3. There were no differences between educators and nursery association executives as to whether an educational institution should seek input from a state nursery association concerning curriculum development.

Hypothesis 4. There were no differences between educators and nursery association executives as to whether an educational institution should seek input from a state nursery association concerning curriculum revision.

Hypothesis 5. There were no differences between educators and nursery association executives as to whether there is sufficient cooperation between educational institutions and state nursery associations to provide graduates who the industry feels are well prepared.

Based on the results of this study and the findings of other researchers cited previously, an industry/educator time linkage model was developed. The model suggested penitence activities and linking activities to develop better communication systems. Using a facilitator, the two groups progress to a level of greater cooperation and ultimately to a level where a linkage is established. Once the linkage has formed, the relationship is maintained and evaluated to improve the linkage. In this study it was proposed that the nursery associations/educational institutions linkage aids in the development and revision of ornamental horticulture curricula.

Conclusions

The conclusions from this study were based on research identified in the literature and on the interpretation of the data collected from educators and nursery association executives.

1. There was contact between educators and career association executives concerning curriculum development and revision. The level of participation needs to be greater in that participation by industry is recognized as being essential to curriculum development and revision in vocational education.
2. The method of contact between educators and career association executives was important. Personal contact was the most effective method of communication.
3. Educators and career association executives agreed that state career associations should have input into the curriculum development and revision process.
4. Educators and career association executives had a similar range of opinions concerning the present level of cooperation between the two groups. A higher percentage agreed that there is extracurricular cooperation, but there was a large undecided group that warrants attention.
5. Educators need to develop more avenues of communication with career association executives.
6. An industry/education linkage model would aid in bringing these two groups closer together resulting in greater involvement of the state career associations in the development and revision of vocational curriculum standards in postsecondary institutions.

the greater involvement would be one way of maintaining relevancy in the curriculum.

Recommendations

It was recommended that state nursery associations and postsecondary educational institutions offering agricultural horticulture programs at the less than baccalaureate level form a linkage to meet the needs of industry more effectively by developing and revising curricula in a more relevant manner.

The recommendations that follow were made to aid the linkage development process and, in turn, provided for greater curricular relevancy.

1. The development of an industry/education linkage depends on support from both parties. The benefits incurred by entering a linkage relationship must be realized by both groups. There must be an individual to act as a facilitator to foster the relationship and witness the benefits.
2. An executive in the nursery association and an educator should serve as cofacilitators.
3. The linkage should be developed in a systematic manner, first opening a line of communication, and then progressing to the cooperation level.
4. The linking activities should serve to maintain the relationship. The relationship should be the vehicle to provide for greater involvement of industry in curriculum matters.

3. The linkage should be evaluated on a continuous basis to assess its attractiveness and provide for improvement. The evaluation can be accomplished by providing a feedback mechanism that flows to the facilitator/s.
4. The linkage model should be tested and further research should be conducted to assess the model.
5. The use of an industry/education linkage to facilitate more relevant curriculum development and revision should become an accepted practice in vocational-technical education.

APPENDIX B MERCURY ASSOCIATE CONFIDENTIALITY LIBRARY SURVEY (O&I)

Name: _____

This survey is being conducted to determine some specific information that may be useful to researchers and practitioners working in the field of child abuse and neglect. The information obtained from this survey will be used to develop a manual that will help you and your organization.

The survey will be mailed to you by a letter. It will contain the survey questions, a cover sheet, and a return envelope. The return envelope will be used to return the survey to the researcher. It will be used to return the survey to the researcher. It will be used to return the survey to the researcher.

INSTRUCTIONS

1. Fill out the survey questions carefully. Do not leave any questions unanswered. If you are unsure of an answer, write "I don't know" or "I am not sure".
2. The survey is to be completed by the person who is responsible for the child abuse and neglect program in your organization. If you are not the person responsible, please ask the person responsible to complete the survey.
3. The survey is to be completed by the person who is responsible for the child abuse and neglect program in your organization. If you are not the person responsible, please ask the person responsible to complete the survey.

GENERAL INFORMATION

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: _____

CHILD ABUSE AND NEGLECT PROGRAM INFORMATION

1. How long has your organization been in operation? _____
2. How many children are in your organization? _____

3. How many children are in your organization? _____
4. How many children are in your organization? _____

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24. How many children are in your organization? _____

APPENDIX B SENIORS ASSOCIATION/EDUCATION LITERACY SURVEY (SAL)

Center _____

This survey is being completed by _____, a senior education volunteer (SEV) at the _____ Center. The SEV is responsible for the center's literacy program and for the center's overall operations. The center's description and location are as follows:

The center's address is _____, the center's phone number is _____, the center's fax number is _____, the center's email address is _____, the center's website is _____, the center's hours of operation are _____, the center's services are _____, the center's programs are _____, the center's staff are _____, the center's board of directors are _____, the center's volunteers are _____, the center's funding sources are _____, the center's other information is _____.

Background

1. The center's mission is _____, the center's vision is _____, the center's goals are _____, the center's objectives are _____, the center's strategies are _____, the center's programs are _____, the center's services are _____, the center's staff are _____, the center's board of directors are _____, the center's volunteers are _____, the center's funding sources are _____, the center's other information is _____.
2. The center's location is _____, the center's size is _____, the center's age is _____, the center's type is _____, the center's ownership is _____, the center's management is _____, the center's staff are _____, the center's board of directors are _____, the center's volunteers are _____, the center's funding sources are _____, the center's other information is _____.
3. The center's history is _____, the center's development is _____, the center's growth is _____, the center's challenges are _____, the center's opportunities are _____, the center's strengths are _____, the center's weaknesses are _____, the center's assets are _____, the center's liabilities are _____, the center's equity is _____, the center's debt is _____, the center's net worth is _____, the center's other information is _____.

Center Information

Organization: _____
Contact: _____
Address: _____
City: _____
State: _____
Zip: _____

SEV Information/Background

1. The SEV's name is _____, the SEV's title is _____, the SEV's organization is _____, the SEV's address is _____, the SEV's city is _____, the SEV's state is _____, the SEV's zip is _____, the SEV's phone number is _____, the SEV's fax number is _____, the SEV's email address is _____, the SEV's website is _____, the SEV's other information is _____.

SEV Background

- | | Yes | No |
|--|-------|-------|
| 1. Have you ever completed a literacy program for a senior? | _____ | _____ |
| 2. If yes, when did you complete it? | _____ | _____ |
| 3. If yes, where did you complete it? | _____ | _____ |
| 4. If yes, what was the purpose of the program? | _____ | _____ |
| 5. If yes, how long did it last? | _____ | _____ |
| 6. If yes, how many people participated? | _____ | _____ |
| 7. If yes, how many people completed the program? | _____ | _____ |
| 8. If yes, how many people dropped out of the program? | _____ | _____ |
| 9. If yes, how many people were referred to the program? | _____ | _____ |
| 10. If yes, how many people were referred to the program by you? | _____ | _____ |
| 11. If yes, how many people were referred to the program by others? | _____ | _____ |
| 12. If yes, how many people were referred to the program by the center? | _____ | _____ |
| 13. If yes, how many people were referred to the program by the community? | _____ | _____ |
| 14. If yes, how many people were referred to the program by the media? | _____ | _____ |
| 15. If yes, how many people were referred to the program by other sources? | _____ | _____ |

13. _____
14. How, looking for your theoretical orientation in your own education, are you professional orientation changed? _____
15. How the work through education did you in changing profession in the past? _____
16. In your life, a family member is responsible for education orientation that the other family member? _____
17. In family member have an contrary orientation. _____

For following questions provide your opinion:

Example: Theoretical orientation should always remain.

18. In your team (100%) Agree 80% Disagree 20%
 19. In your (100%) Strongly Agree 90%
 20. A team always orientation should have an opportunity to become better orientation. _____
21. A team always orientation should have an opportunity to become better orientation. _____
22. Theoretical orientation should have team, but each member responsibility. _____
23. Theoretical orientation should have team, but each member responsibility. _____
24. There is, although responsibility remains one, although responsibility and one. _____
25. There is, although responsibility remains one, although responsibility and one. _____

26. How do you, a family member, support the following in the past, present or future? (100%) (100%) (100%) (100%) (100%)
 _____ Personal Success
 _____ Professional Success
 _____ Primary Secondary Education
 _____ Other (specify): _____

27. How do you, your family, support and affect in connection with the work (primary, secondary, tertiary) in the past, present and future? (100%) (100%) (100%) (100%) (100%)

There are the questions with your family. Please answer by _____
 1) How much does it matter to you? (100%) (100%) (100%) (100%) (100%)

History of Research
 in the Field of Psychology and
 the Brain
 from Psychology Today 1980

APPENDIX C
MURDERY ASSOCIATION QUESTIONNAIRE RETURN TABLE

<u>Name</u>	<u>Position</u>
Charles B. BATE	Executive Secretary (Retired) Connecticut Murdersmen's Assn.
Al Dwight Black	Executive Secretary (Retired) Maine Murdersmen's Association
E. Howard Davis	Executive Secretary (Retired) Pennsylvania Murdersmen's Assn.
Mrs. Rogers' Deaconer	Executive Secretary (Retired) Washington Murdersmen's Assn.
Edith Jones	Executive Secretary (Retired) Maine Murdersmen's Association
ELMER J. Moss	Executive Secretary (Retired) California Murdersmen's Assn.
Dr. Richard P. White	(Retired) American Association of Murdersmen

APPENDIX D

EDUCATIONAL INSTITUTION QUESTIONNAIRE FRAGMENT PAGE

NAME	EDUCATIONAL INSTITUTION
Steve Kilback	Area Arundel Community College ARUND, MD
Jerry Grossman	Lake City Community College Lake City, FL
Charles Davis	Wilder County Community College Stone Ridge, ME
Tapscott Green	City College of San Francisco San Francisco, CA
Barry M. Finsen	Reedley College Reedley, CA
Dr. Robert Gillespie	St. Louis CC at BEAUMONT Richmond, MO
Alexander L. Graham	College of San Mateo San Mateo, CA
Floyd King	Richland College Dallas, TX
James S'Neal	Community College of Denver Boulder, CO
William Patterson	Fortshall Community College Los Altos Hills, CA
Harold Schuman	Gateway Technical Institute Berkeley, WI
Mary Schneider	Trident Technical College Charleston, NC
Dr. James Sweeney	University of Maine Orono, ME

Virginia Thompson	College of Lake County Okauchee, IL
Gene Towley	Massachusetts Agricultural & Technical Institute, Northampton, MA
Dr. William Waters	Southern Maine Vocational and Technical Institute South Portland, ME

APPENDIX C
PARENT LETTER (NO)



MAINE HUNTING AND TRAPPING ASSOCIATION

July 25, 1988

Dear

I am developing a questionnaire to be sent to a randomized
sample of Maine Youth Group. The purpose of this
survey is to gather information on hunting and trapping
participation and attitudes of youth.

I trust your help in reaching the questionnaire. Before
sending it out to the Youth Group, I am asking
you to help me by completing the questionnaire. I am asking
you to complete the questionnaire with the
truth to answer it. Is it really important? How is
your participation? Is it from this group? Is it really
the right to be answered?

It is important to have each participant return the questionnaire.
Please return it by August 1st.

Thank you for your cooperation. The data will be analyzed
in a short time of appreciation.

Sincerely yours,

Robert A. Phillips
Executive Director, MHA

cc: MHA

cc:

APPENDIX F

APPENDIX C
NURSERY ASSOCIATION EXECUTIVES' LETTER

Nursery Association Executives

OFFICE OF SOCIETY, BOSTON, MARCH 1915, PAGES 100-101

September 10, 1915

The Nursery Association Executives are cooperating with the Council, American Nursery, Boston, Massachusetts, in a nationwide survey of nursery associations. The study involves gathering data on the nursery associations, the associations will be used to develop a model for improving the relationship between nursery associations and educational institutions. The model will be helpful in developing educational programs which are linked to the needs of the horticulture industry.

You have been selected to participate in this study and you will receive the questionnaire in approximately two weeks. As you can well imagine, it is most important to have your responses reflect the questionnaire. Your cooperation is essential to the success of this project.

Sincerely,

Harry Hager
President
Nursery Association Executives

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APPENDIX B
FIRST QUESTIONNAIRE LETTER (9A)



MAINE BIRDERS' ASSOCIATION

September 16, 1988

The questionnaire I am using to gather information concerning the importance of various birding sites for conservation is being filled in several ways. As was explained by Vince Brown in a previous letter, it is very important to have many participants before the questionnaire.

The Maine Birders' Association board is pleased to express its appreciation for taking the time to complete the questionnaire.

Please return the questionnaire by October 15, 1988. If you have any questions, please call Alan at 603/885-8800.

Sincerely yours,

Richard C. Thompson
Secretary, Executive Board
(603) 885-1263 ext. 100

cc: 2

Enc.

APPENDIX 1
POLYMER-BLENDED POLYMER-LAYERED CLAY



South West Technical Institute

Figure 6

has been shown to participate in a study in Sweden, it must be assumed, the relationship between information technology and social security systems. The final goal is to help in developing information systems that are currently used in the work of the participating states.

The study involves collecting data using a survey instrument. The information required in this report will be generated in a manner which will maximize confidentiality. The focus on confidentiality and anonymity was not the intent.

It is very important to have this carefully reviewed and
approved by the appropriate authorities in the company
and this document is the basis for the subsequent
action by the company. It is very important to have this
document approved by the appropriate authorities in the company.

This project is funded by the Netherlands Research (NWO) and the conference of the Ministry of Education, Culture and Science.

Figure 1

1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2

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APPENDIX J
SECOND QUESTIONNAIRE LETTER (044)



MAINE MUSEUMERS ASSOCIATION

18 October 2007

The Maine Sea Grant has received a Request for Information/Proposal (RFI/RFP) from the Sea Grant Consortium for the Maine Museumers Association (MMA) to develop a new program in the area of marine education. The MMA is a non-profit organization that is dedicated to the promotion of marine education and the development of a new program in the area of marine education. The MMA is a non-profit organization that is dedicated to the promotion of marine education and the development of a new program in the area of marine education.

The MMA is a non-profit organization that is dedicated to the promotion of marine education and the development of a new program in the area of marine education. The MMA is a non-profit organization that is dedicated to the promotion of marine education and the development of a new program in the area of marine education. The MMA is a non-profit organization that is dedicated to the promotion of marine education and the development of a new program in the area of marine education.

Sincerely yours,

Prof. Robert H. Stewart, Executive Director
Maine Museumers Association

WJG
and others

APPENDIX E
SECOND QUESTIONNAIRE LETTER (C4)



Swedish State National Technical Institute

First Name ■ Middle Name(s), Initial(s) ■ Surname (last name)

11 October 1981

We would like you to complete a survey questionnaire for
Lindberg Survey. As the very important to the Institute and the
to the Survey. Your responses to the questions will provide us with
input into the development of a survey to enhance the relationship
between educational institutions and their primary research.

The survey and a self-addressed stamped envelope is enclosed.
Please take the time to complete the survey. If you have any
comments about the survey or need to be by 25 October 1981, your
participation in this project will be greatly appreciated.

Sincerely yours,

John Lundberg, Chairman
Department of Planning and Social
Technology

WJL
enclosure

EXHIBIT C
TRIO QUESTIONNAIRE LETTER (RT)



Southern African National Development Bank
1000 West 10th Street, Suite 1000, Dallas, Texas 75201-2000

21 October 89

Dear respondent:

If you have not returned the Survey Association/Management/Individual Survey at this time you are now considered a non-respondent. It is important to note that there is a difference between respondents and non-respondents. Please take the time to complete the attached questionnaire and return it to me by returning this.

Your cooperation will be greatly appreciated.

Sincerely yours,

Richard Shattuck

cc: [redacted]

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BIOGRAPHICAL SKETCH

Richard Clark Churchill, Jr., was born February 18, 1918 in Lynn, Massachusetts. His parents were Richard and Helen Churchill. He attended public schools in Lynn through the ninth grade. He enrolled in Essex Agricultural and Technical Institute and completed his high school requirements there, graduating in 1938.

Upon graduation from high school, he entered Stockbridge School of Agriculture at the University of Massachusetts. He graduated in 1941 with an Associate of Applied Science degree. He attended the University of Georgia from 1941 through 1948 receiving Bachelor of Science and Master of Science degrees in plant pathology.

After graduation he taught plant science at Essex Agricultural and Technical Institute until 1951. He then established the Plant and Soil Technology program at Southern Essex Vocational and Technical Institute. He is currently the supervisor of that program.

He was married in 1944 to Diane Dickerson. They have two children, Laurie and Chad, and currently reside in Cape Elizabeth, Maine.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.


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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.


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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.


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